$ 50.00

Marine Electronics & Safety Equipment

Buyer's Guide 2014

WTN Electronics, Ltd.

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Minneapolis, Minnesota U.S.A.

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Photo: February 2014

Our Office and Staff

This picture shows the office of WTN Electronics, Ltd.
Pictured from left to right are:
Susan Auyer, Office Manager, John Kyriagis, Vice President-Sales and Marketing, Shelley Kyriagis, Vice President-Operations. Ben Kyriagis, President.
We also have a warehouse facility near the Minneapolis-St. Paul Airport where we keep some of our inventory.

Cover photo by: Ben Kyriagis. Taken in 2009 onboard a ferryboat near Kythira island, Greece (visible in the background).

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Please Read This First!

Important notice about prices.

All prices in this catalog are the factory suggested retail prices (List prices). **Your net prices will be much lower.**

Your prices will depend on quantities of each item and the overall size of the order. All prices in this catalog are subject to change without notice.

Some items in the catalog do not show a list price because they may have many options. We will quote any of the options on request. When we send you a price quote it will be valid for at least 21 days.

You may use this Buyer's Guide to get a quick overview of the items you need. Then, please send us your inquiry via EMAIL or FAX and we will send you our **BEST PRICES** Ex our warehouse and also CIF to your specific destination.

We appreciate your business and cooperation and look forward to hearing from you soon.

Please contact us for any MARINE ELECTRONICS and SAFETY related products even if they are not listed in this catalog. Chances are very good that we will be able to supply what you need at the right price and time.

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ICOM

VHF MARINE TRANSCEIVER

IC-M24

FLOAT'N FLASH

Float'n Flash

Icom pioneered the floating VHF marine radio, and others followed. Setting a new trend yet again, the IC-M24 floats and lets you know where it is with the flashing feature. The radio flashes in the water, even when the power is off! It is smaller and lighter than any other floating marine handheld too.

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HANDHELD MARINE VHF RADIOS

ICOM

List Price

M-24

ICOM 5 Watt Handheld VHF Radio
World's First Floating VHF Radio **$ 299**

Icom pioneered the floating VHF marine radio and others followed. Setting a new trend yet again, The IC-M24 has a flashing light feature that activates when the radio hits water, even if the power is off! If you drop this floating radio overboard, it's easier to find than ever, day or night. No speaker/mic capability.

Additional Features

- Compact and easy to use
- Larger battery
- Great features at a great price
- Larger energy efficient battery
- Dual/Tri-watch functions
- 4-step battery life indicator
- Tag scan and Favorite channel functions
- AquaQuake draining function
- Auto scan function

M-36

ICOM 6 Watt Handheld VHF Radio **$ 320**

In marine environments there are many sources of noise that can affect the quality of your communications, such as engine noise, breaking surf and more. The IC-M36 automatically adjusts the outgoing voice and the incoming audio to compensate for the ambient noise level: whether you're in a loud environment or in a quiet area, the IC-M36 ensures your radio conversation is sent and received as clearly as possible.

Additional Features

- Waterproof construction equivalent to IPX7 (1m depth for 30 minutes)
- Dual/Tri-watch functions
- Weather channel with weather alert
- 4-step battery life indicator
- Auto scan function
- Instant access to Ch 16 or Ch 9
- "True" noise cancelling internal microphone

HM-165 Speaker Mic……$ 75 each

M-88

ICOM 5 Watt Handheld VHF Radio
It's not just another marine radio. **$ 430**

What makes Icom's new IC-M88 so special? Functionality. Features. Unparalleled battery life and power. Submersible construction. Military ruggedness. Frequency control. Choice of optional features. And a surprisingly small size that fits incredibly well in the hand. Compare for yourself; the Icom IC-M88 is a better fit not just for one-handed operation, but all-around.

Additional Features:

- 5 Watts of power (3 Watt or 1 Watt selectable)
- Submersible JIS7 construction
- 1700 mAh Li-ion battery
- 2-Step power saver selections
- Three year warranty
- Up to 22 free channels reserved for Land Mobile (commercial) use
- allows per-channel wide/narrow channel spacing
- built-in CTCSS & DTCS
- Military rugged
- Backlit LCD display and key pad

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STANDARD HORIZON
Marine Division of Vertex Standard

HANDHELD MARINE VHF RADIOS

List Price

HX280S

Submersible 5 Watt Marine Portable VHF **$ 199**

No ordinary portable Marine VHF, the HX280S with battery life, features and included accessories makes the HX280S the best value in it's class. Has no speaker/microphone capability

- 1650mAh Lithium-Ion battery - more than 13 hours
- Oversized LCD
- Includes 12VDC & 110VAC or 220VAC overnight chargers with drop in base, antenna and belt clip

HX290

Floating 6 Watt Marine Portable VHF **$ 220**

Designed from the ground up to float or be able to be submersed in 1.5 meters of water for 30 minutes the HX290 will keep you communicating in the harshest environments. The design of the HX290 fits well in your hand and with large keys and volume knob it is easy to operate even with gloves.

- Selectable 5 and 1 Watt transmit power output
- All USA, International and Canadian Marine Channels

HX370S

Submersible 5 Watt Marine Portable VHF **$ 250**

Smaller, Lighter, unique functions, and built to take the day in punishment of the marine environment. Includes 12VDC & 110VAC or 220 VAC overnight charges with drop in base, submersible AA Alkaline battery tray and belt clip

- Marine and 40 commercial LMR VHF (dealer programmable) channel capability
- 1400mAh Nickel Metal Hydride - 18 hour battery
- Speaker mic and voice scrambler

HX471S

Submersible 5 Watt Marine VHF **$ 417**

INDUSTRY FIRST DSC portable transceiver capable of transmitting and receiving on Marine VHF, Family Radio Service (FRS).

- MULT-BAND Receive
- DIGITAL SELECTIVE CALLING (DSC) DISTRESS CALL
- Marine VHF and FRS
- Rugged magnesium die-cast construction

HX751

$ 250

Floating 6 Watt Handheld VHF

Drop it on a deck or drop it in the water, the HX750S is designed to take on the roughest of seas and keep you communicating all day with it's ergonomical shape and diecast chassis. It is the only 6W marine radio at this price point. 6W allows you to talk farther and clearer than 5W VHF's.

- Supplied with 1150mAh Li-ON battery, 110V or 220V charger, antenna, and belt clip
- 1150mAh Li-ON battery
- Built-in thermometer sensor
- 700mW loud internal speaker audio

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HANDHELD UHF RADIOS

List Price

VX230U

Vertex Standard - VX-230U UHF Portable Radios **$ 275**

The new VX-231 radio provides long-lasting Li-Ion battery power, improved ergonomics and wide band coverage that adds up to a better investment.

- 16 channel capacity
- 5 Watts power output
- 2-Tone / 5-Tone Encode and Decode

Vertex Standard

VX-351U

Vertex Standard - VX-351U UHF Portable Radio **$ 260**

The VX-351U has long battery life, wide band coverage and stun, kill, and revive option.

- 16 channel capacity
- 5 Watts UHF or VHF
- Wide band coverage
- VX-354 Four key or VX-351 no key versions
- Long battery life
- Extra signaling built in
- Option connector for encryption or MDC
- Stun Kill and Revive (option)

Vertex Standard

CP200

Motorola CP200 Handheld Two-Way Radio
Includes NiMH battery, Rapid Charger, Antenna, and Belt Clip **$ 482**

The Radius CP200 portable two-way radio delivers the quality features you want at a very competitive price. Powerful 500 mW audio output penetrates noisy environments, providing clear, crisp audio at any volume.

- Large Textured PTT
- Spring Action Belt Clip
- Rugged, Die-Cast Chassis
- Two Programmable Option Buttons
- 4 Programmable Channels

MOTOROLA

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INTRINSICALLY SAFE RADIOS

VHF RADIOS WITH ALL U.S.A. & INTERNATIONAL MARINE CHANNELS PREPROGRAMMED

STANDARD HORIZON
Marine Division of Vertex Standard

List Price

HX370AS

Standard Horizon Intrinsically Safe VHF Handheld Radio
Submersible 5 Watt Marine Portable VHF **$ 499**

Smaller, Lighter, unique functions, and built to take the day in punishment of the marine environment. Includes 12VDC & 110VAC or 220 VAC overnight charges with drop in base, submersible AA Alkaline battery tray and belt clip

Accessories

Standard Horizon supplies the HX370AS with an Intrinsically safe battery FNBV57-AIS. Also included is a waterproof battery tray, 12VDC Charger, 110VAC changer and a desk top drop-in cradle to charge the radio on shore or on your boat. Additionally, an easy to see battery life indicator on the LCD warns you when the battery needs recharging. The HX370S is capable of using optional speaker microphones, headset, and voice scrambler for those that want secure communications.

Features

An oversized LCD has channel names to inform you of the use of each selected channel. The high intensity strobe light emits the internationally recognized SOS signal that can be seen over 1 mile away at night… another Standard Horizon first!

Warranty

If your Standard Horizon HX370AS ever fails for any reason including water damage during normal use in the first three years, STANDARD HORIZON will repair or replace it free, without hassle or charges… period!

ICOM

M88-IS

Icom Intrinsically Safe VHF Handheld Radio **$ 555**

What makes Icom's new IC-M88 so special? Functionality. Features. Unparalleled battery life and power. Submersible construction. Military ruggedness. Frequency control. Choice of optional features. And a surprisingly small size that fits incredibly well in the hand. Compare for yourself; the Icom IC-M88 is a better fit not just for one-handed operation, but all-around.

Features:

- 5 Watts of power (3 Watt or 1 Watt selectable)
- Submersible JIS-7 construction
- Long-lasting 1700 mAh Li-ion battery allows up to 24 hours of operation (5:5:90 Tx:Rx:Standby)
- 2-Step power saver selections (5 full Watts, or 3 Watts, or 1 Watt)
- Three year warranty
- All International, USA and Canadian channels, plus weather channels with alert function available. (USA version only)
- Up to 22 free channels reserved for Land Mobile (commercial) use
- allows per-channel wide/narrow channel spacing
- built-in CTCSS & DTCS
- appropriate license may be required
- Military rugged (MIL SPEC 810 C,D,E for shock and vibration)
- Instant access to Ch 16 and Ch 9 (or Call channel)

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INTRINSICALLY SAFE RADIOS

Motorola GP-328
UHF or VHF

The 16-Channel GP328 is the practical two-way radio solution for professionals who need to stay in contact. This practical radio increases productivity by streamlining your radio use.

Unsurpassed Audio Quality
Equipped with Motorola's X-PAND™ Technology and LLE, it enables crisper, clearer and stronger audio quality, allowing you to keep communicating, even in noisy environment.

Smart Choices
Switchable RF Power Level optimizes coverage and conserves battery consumption.
Voice Storage option allows up to 2 minutes of recording.
Programmable Channel Spacing of 12.5/25 kHz mode allows flexible and easy migration of channel spacing.
Repeater/Talkaround Enable/Disable gives freedom to communicate via a repeater for wide area coverage; or bypass a repeater and talk directly to another unit for easy local unit-to-unit communications.

Easy To Use
Lightweight Lithium Ion battery option makes the radio one of the lightest in its range.
Easy-to-access, one-touch Emergency Siren button with piercing alarm to seek help in critical situation.
Tri-colour LED Battery Gauge indicates battery status with early warning on low battery strength.
Tone Tagging allows 8 different ringing tones to be assigned to 8 specific users/talkgroups making audio caller identification to these 8 groups possible.

Versions
GP-328 is sub-divided into different versions:
GP-328 VHF 136-174 Mhz 16-Channel
GP-328UHF 403-470 Mhz 16-Channel

List Price: $ 895

VX-900 SERIES

VHF/UHF Portable Radios

- 512 CHANNEL CAPACITY (Managed in up to 20 Memory Groups)
- WIDE-BAND COVERAGE
- 5 WATTS POWER OUTPUT (Selectable to 2.5, 1.0, 0.25, W)
- LONG BATTERY LIFE: 14 (w/FNB-V68LI) or 18 (w/FNB-V69LI) HOURS (VX-900U w/saver)
- SIXTEEN POSITION ROTARY CHANNEL SELECTOR
- 12.5 / 25 kHz BANDWIDTH PROGRAMMABLE PER CHANNEL
- MIL-STD 810 C/D/E
- DIE-CAST CHASSIS
- NON-WIRE MAIN BOARD CONSTRUCTION
- SINGLE / DUAL PRIORITY SCAN MODES
- NOISE CANCELING MICROPHONE
- WATER SHIELD MICROPHONE CONNECTION
- MIL-SPEC SPEAKER MIC AVAILABLE
- LOUD 700 mW AUDIO OUTPUT
- 8 CHARACTER ALPHANUMERIC, INVERTIBLE LCD DISPLAY
- 8 PROGRAMMABLE SOFT KEYS AND 3-POSITION TOGGLE SWITCH
- DTMF SIGNALING & DIALING FEATURES
- USER SELECTABLE TONES / CODES
- CTCSS / DCS ENCODE + DECODE
- EMERGENCY FUNCTIONS
- ENCRYPTION
- EMBEDDED MESSAGE
- INTRINSICALLY SAFE VERSION AVAILABLE
- OPTIONAL ALKALINE BATTERY CASE
- RADIO TO RADIO CLONE FEATURE
- TALK AROUND
- BCLO, BTLO, AND TOT FUNCTIONS
- PROGRAMMABLE MINIMUM VOLUME

Vertex Standard

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INTRINSICALLY SAFE RADIOS

UHF RADIOS WITH CHANNELS PROGRAMMED AS SPECIFIED BY THE BUYER

List Price

VX410 U

Vertex Intrinsically Safe UHF Handheld Radio **$495**

The VX-410 is the latest portable in the Vertex Standard line. It is the most featured packed sub-compact portable to date. 32 channels, 5 Watts (VHF or UHF), 2-tone encode/decode, 5-tone encode/decode, Inversion scrambler, Multiple Scan Modes, DTMF ANI and many other 'standard' features.
There are also options for: Digital Voice Storage and Rolling Code Encryption. This radio will prove to be one of the best values you could find on the market today.

Programmable Function buttons
The VX-420 has two programmable function keys. These can be programmed for:

- Monitor
- Squelch off
- Low Power
- Scan
- Follow-Me Scan
- Dual Watch
- Talkaround
- Call/Reset
- Speed Dial
- TX Power SAVE Off
- Call 1 ~ 3
- Group
- ACC1
- ACC2
- Play
- Record
- Encryption

Vertex Standard

VX921 U

Vertex Intrinsically Safe UHF Radio—Waterproof **$ 695**

The submersible VX-920 series offer an incredible range of features in a convenient package. The VX-920 Series of portable two-way radios are specifically designed to perform in the most demanding and critical conditions with extreme IP55 and IP57 spec water and dust protection. The VX-920 series waterproof portables can actually be submerged under 3 feet (approx. 1 meter) of water for 30 minutes and come up in perfect working order, ready for action. This is the perfect portable radio if you're a dedicated Public Safety officer or a tough environment commercial user - rain, snow, fire suppression spray and dust are no problem. In addition, the Sub-Receiver Option allows dual-band receive for greater flexibility and multi-agency interoperability when full situational awareness at all times is a must. Manufactured to strict ISO 9002 and MIL-STD specifications, the waterproof VX-921 series will perform when you need it most.

Features:
512 Channels & 32 Groups, Lightweight & Large LCD
5W Power Output (selectable to 2.5, 1 & 0.25 watt power levels)
Rugged Construction - MIL-STD 810 C/D/E
CTCSS/DCS Encode & Decode
12.5/25 Khz Bandwidth Programmable By Channel
5-Tone as Standard
12 Character Dot Matrix Display
PC Programmable
RadioTo Radio Cloning
BCLO, BTLO, and TOT Functions
2 Programmable Soft Keys1
Multi-Position Programmable Toggle Switch
Voice Inversion Encryption Available
ARTS (Auto-Range Transponder System)

Vertex Standard

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FIXED MOUNT MARINE VHF RADIOS

ICOM

List Price

IC-M412

ICOM Fixed Mount Marine VHF Radio. (Colors: Black or White) **$ 325**

FEATURES

Easy to see large display The large backlit LCD shows a full sized channel number. A 10 character scrolling message shows the channel name and can show position, time and DSC messages.

Common GPS/NAV interface When connected to an external GPS receiver, current position and time are shown on the IC-M412's display. When receiving position information from another vessel, the IC M412 can transfer it to a navigational device via NMEA 0183 connectivity.

Superior receiver sensitivity, Superior speaker audio The IC-M412 has 0.22µV (typical at 12dB SINAD) superior sensitivity for class-leading receiver performance. The front facing speaker offers 4.5W (typical) of loud, clear reception.

Supplied accessories: Hand microphone, DC power cable, Mounting bracket kit

Additional Features:

- Built-in Class D DSC
- IPX7 submersible protection (1m depth for 30 minutes, except cables)
- Superior receiver sensitivity, superior speaker audio
- Large LCD and simple operation
- Common GPS/NAV interface
- AquaQuake™ draining function
- Weather channel receive with alert function
- Favorite channel function
- Dualwatch and Tri-watch functions

IC-M504

ICOM Fixed Mount Marine VHF Radio **$ 530**

IPX8 Submersible PLUS (1.5m depth for 30 minutes)

The IC-M504 withstands submersion in up to 1.5m depth of water for 30 minutes. It is equivalent to the IPX8 standard. All products are rigorously checked to pass the quality test at the factory.

ITU Class D DSC

The IC-M504 has built-in class D DSC, which enables you to constantly monitor channel 70. This functionality provides users at sea with the peace of mind that they can call for help by pressing the "Distress" button if the need arises.

IC-M604

ICOM Fixed Mount Marine VHF Radio **$ 995**

Top-of-the-line, all the way! The IC-M604 has excellent receive specifications which allow a weak signal a better chance of being heard when louder signals are around it. The powerful 5.0W (typical) audio output from the front facing speaker further increases the audibility and quality of received calls.

- IC-M604 has a Dual/Tri-watch function monitoring Ch. 16 and/or call channel.
- 7 levels adjustable backlit display and keypad
- Optional voice scrambler, UT-112 for private communication
- Weather channels with weather alert function
- AquaQuake draining function emits a vibrating sound and clears water away from the speaker grill.

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LOUDHAILER FUNCTIONS

Loudhailers generally provide three basic functions on a vessel. They provide a loud signal device that can emit a warning tone to other vessels, either manually or with automatic preprogrammed signals. They can be used to hail other vessels with voice communications and then listen for return reply. Finally, they can be used internally as intercoms between the bridge and key locations onboard. Many systems also can be hooked to external sensors, like bilge alarms, to sound a warning if the sensor is tripped.

STANDARD HORIZON

VLH-3000

LIST $ 450

MFG #VLH-3000

- Twice the power with two 30 watt PA outputs
- Dedicated button for access to intercom station
- Dual station intercom capable
- Noise cancelling mic
- Four fog horns, bells & whistles

Raymarine®

RAY 430

- 30 watt loud hailer with listen back capability
- Automatic fog signals conform to USCG and International rules
- Built-in intercom provides two way talk up to four stations
- Built-in alarm mode for use with alarm sensors

Description	Man. Part #	
Ray 430	M95997A	LIST $ 639
Ray 430 With Horn	M95997	LIST $ 825

FURUNO®

LH3000

LIST $ 895

MFG #LH3000

- 30 watt forward and aft output
- Alarm siren capability
- External speaker output
- Use up to 4 intercom speakers for two-way intercoms
- Built-in high quality speaker for intercom and hailer listen capability

LH3000 Accessories:

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GMDSS VHF RADIO WITH DSC

JHS-770S

VHF/FM Radio Telephone
IMO Type Approved/GMDSS Compliant - DSC - Class A

List Price
$ 2,195

Features

- **Direct call by AIS** - When connecting your AIS to the new VHF, new possibilities become available. You can now easily select the vessel you wish to get in contact with, and send a DSC message immediately.
- **Easy operation with JOG dial** - The combination of push buttons and JOB dial operation, together with JRC's innovative software including easy menu structures ensures logical, accurate and convenient operation.
- **Intercom & loudhailer function** - Has an intercom functionality for east communication with other VHF controllers onboard. An optional external speaker with amplifier increases talk power, making your messaging loud and clear, thereby adding to the safety of the vessel.
- **3.8" high brightness LCD screen** - High brightness screen with excellent sunlight viewability.
- **120 seconds recording** - In situations where loud engines or other background noises disrupt your reception, this characteristic feature enables you to immediately repeat any unclear messages.
- **Available as semi-duplex or full-duplex** - This class A VHF radiotelephone incorporates advanced modular design that allows for maximum installation flexibility.
- **Easy configuration** - The JHS-770S is developed upon maximum flexibility, having a separate transceiver and controller allowing flexible installation in confined spaces. Either panel, desktop or overhead mounting is possible with this size reduced VHF radiotelephone.
- **Wing controller** - For wing and/or outside applications, JRC has developed an optional, simplified channel selector. This compact weatherproof unit allows basic operation, such as channel and power selection, and has a channel 16 preset.
- **Extendable up to 5 controllers** - The VHF series configuration allows having up to 5 controllers covering various important sections onboard. Additionally, there is a range of possibilities for connecting extra handsets and printers.

Specifications

Transmission Frequency Range:	155.000 – 163.50 MHz
Reception Frequency Range:	155.000 – 163.500 MHz (simplex/semi-duplex)
	160.600 – 162.050 MHz (duplex)
Channel Capacity:	Up to 57 ITU / USA / Canadian channels
Private channels:	200 max.
Memory channels:	10 max
Weather channels:	10 max
Channel Spacing:	25 kHz
Mode of Modulation	G3E/F3E, DSC/ATIS G2B/F2B

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GMDSS VHF RADIO WITH DSC

List Price
$ 2,195

FM8800S

GMDSS Compliant, 25 Watt DSC-VHF/FM Radiotelephone with DSC– Class A

POWER OUTPUT	POWER USE
25 W	24 VDC

Features/Specifications

- Fully meets ITU, IEC, ETSI, IMO for GMDSS and other national standards
- Compact all-in-one unit design includes a 25-Watt radiotelephone, Class A DSC modem and CH70 watch receiver
- Superb voice quality by employing the lower-noise-designed speaker
- Dual/multiple watch on a selected channels while monitoring CH16
- Quick access to CH16 key
- Automatic entry of own ship position and time from a GPS navigator
- Easy channel readout with large characters

FURUNO FM-8800S is a high quality, all-in-one marine VHF radiotelephone designed to comply with the GMDSS carriage requirements for safety and general communications. All the necessary functions such as a 25 W VHF radiotelephone, a Class A DSC modem and a CH 70 Watch Receiver are incorporated into the compact transceiver unit.

The FM-8800S offers simplex/semi-duplex voice communications with high sound quality thanks to its speaker designed to lower the strain. Operators are allowed to conduct communication clearly at any situation. For easy readout of a selected channel, the silver-bright LCD is placed on the front panel indicates the channel numbers with large and easy-to-read characters. Selected channel is easily made with the dedicated rotary control or numeric keys. Other standard features are instant access to CH 16, telephone call via a PSTN, Dual Watch and Multiple Watch functions, which allow watch on CH 16 and other selected channels.

Full Class A DSC functions are provided for distress alert transmission and reception, as well as the general DSC communications including Individual Telephone, All Ships, Group and Area Call. The FM-8800S maintains a continual watch on CH 70 even while you are using another VHF channel. Upon receiving an incoming DSC message, the FM-8800S gives aural and visual alarms.

FM8800S ACCESSORIES

MODEL	DESCRIPTION	LIST PRICE
RB8810	Remote Unit, FM8800S	$ 995
000-054-223	Handset HS2003 w/1.5m Curl Cord	$ 177
000-054-390	Handset HS2003 w/2m Curl Cord	$ 225
000-135-072	HANDSET HS6000FZ11 DYN 10M 6P	$ 195
005-377-760	MICROPHONE DM2003F FM8800S	$ 125

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SAILOR

GMDSS VHF RADIO WITH DSC

List Price
$ 2,185

SAILOR 6222 VHF With DSC Class A

The new SAILOR 6222 VHF is the professional's choice for everyday communications. As the latest in our line of world-class, all-weather VHF radios, we have drawn upon decades of experience to provide the perfect blend of functionality and usability to ensure that your crew remains in constant contact, no matter what the conditions.

Reliable and robust, the SAILOR 6222's highly durable design enables it to weather any climate and a wide range of new features facilitates everyday use, such as a high quality loudspeaker and handset options, an intuitive user interface with a backlit screen, a powerful transceiver and unique remote management capabilities.

Easy to install as part of an integrated GMDSS console or as a standalone VHF, the SAILOR 6222 VHF keeps your crew efficient and safe and your vessel compliant with international regulations.

Features:

- SAILOR Replay
- Display Dimming
- Red Backlight
- Large Tactile Buttons and Wheelknobs
- Powerful Loudspeaker—6W
- Alert Mute Button
- Dual- /Tri-watch and scanning
- Transmit Power—Hi/Lo: 25W and <1W
- Built in DSC Class A (ITU493-13)
- Waterproof (IPx6 and IPx8)
- Power Supply—12VDC Nominal (10.8—12.6VCD). Reverse Polarity Protected
- Operational Temperature Range— -25°C to +55°C
- Frequency Range—TX156,000-161,450, RX 156,00-163,425 MHz

System Includes:

- Transceiver Unit VHF DSC Class A
- SAILOR 6201 Handset with Cradle
- U-bracket
- Flush Mounting Kit
- Power Cable
- SAILOR 6090 Power Converter, 24V DC to 12V DC
- User Manual

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JRC

GMDSS MF/HF Radio WITH DSC

List Price:

SSB Radiotelephone

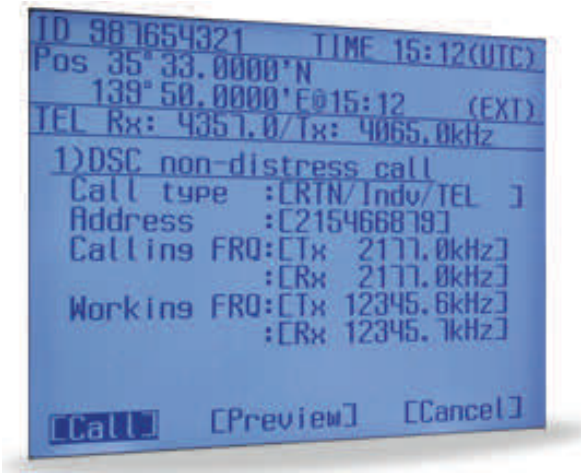
MF/HF RadioTelephone

150W MF/HF Radiotelephone

JSS-2150-A2—With DSC A2 Sea Area	$ 6,620
JSS-2150-A3—With DSC & NBDP A3 Sea Area	$ 9,805

Features

The new JSS-2150 Class A MF/HF radio equipment features an intuitive user interface and advanced modular design that allows for a flexible installation approach in confined spaces.



6-Channel DSC Built-In

The MF/HF has a 6-channel Digital Selective Calling (DSC) as standard with a built-in DSC watch-keeping receiver. You can generate and receive digital selective calls for quick and efficient establishment of distress, urgency, safety and routine communication with other ships and coast stations. In urgent situations, the JSS-2150 sends a distress alert once you press the distress button. The integrated DSC watch-keeping receiver monitors distress alarms through continuous scanning of distress frequencies.

Digital Audio

The MF/HF integrates an advanced digital audio amplifier with a built-in speaker, which increases the amount of power, making your message loud and clear.

Setting Your Settings

The JSS-2150 uses a 3.8-inch high visibility LCD display, which you can adjust at your own convenience. The display has 10 dim settings and you can set the contrast up to 11 different levels, integrated screensaver and assign a commonly used menu to the user key for direct

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MF/HF GMDSS RADIO TELEPHONE

JSB 196 GM - A2 WITH AUTOMATIC TUNER UNIT & DSC

150 WATT MF/HF SSB Radio Telephone With DSC
IMO Type Approved/GMDSS Compliant

List Price
$ 6,580

The JSB-196GM - A2 is a 150 Watt radiotelephone with Digital Selective Calling (DSC). The JSB-196 uses a 32-bit DSP (digital signal processing) to improve noise, and interference rejection, providing enhanced performance. The JSB-196 is designed to meet GMDSS requirements as well as IMO specifications.

System Components

JSB-196GM…….MF/HF Radiotelephone
NCT-196…….DSC terminal
NFC-196…….Antenna tuner
NQW-213……...Hand set
7ZCJD0043A……..(1m) Antenna tuner control cable
7ZCJD0062A…….10′ (3m) DSC power cable
7ZCJD0071……..4.92' (1.5m) DSC control cable
5ZFEX00012…….3A spare fuse
7ZPJD0120…….Instruction manual

JSB 196 GM - A3 WITH AUTOMATIC TUNER UNIT, DSC & NBDP

150 WATT MF/HF SSB Radio Telephone With DSC & NBDP
IMO Type Approved/GMDSS Compliant

$ 10,135

The JSB-196GM is also available with NBDP modem, keyboard and printer. The following system components are included in addition to the above components when upgrading to the NBDP version.

System Components

JSB-196GM…….Radiotelephone
NCT-196N……..DSC Modem.NBDP Terminal
NQW-213…….Handset
MPBP00127A…….Handset Holder
NDZ-227……...Data Terminal Equipment (DTE)
NDF-369……Keyboard
NFC-196…….Antenna Tuner
NBG-300…….DC/DC Power Supply
NKG-800……...Printer for NCT-196
5ZPCM00006…….Roll Paper (1 roll supplied)

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MF/HF GMDSS RADIO TELEPHONE

JSS-296 WITH DSC & NBDP

250 WATT MF/HF SSB Radio Telephone With DSC/NBDP & Battery Charger
IMO Type Approved/ GMDSS Compliant

List Price
$ 16,800

The JSS-296 MF/HF SSB meets all the performance standards in accordance with IMO for SOLAS class vessels and complies with GMDSS. It is designed for vessels navigating A2, A3, and A4 Sea Areas. It consists of the JSS-296 Radio Telephone, ATU, DSC/NBDP Modem, Data Terminal Equipment, Keyboard, Power Amplifier, Battery Charger and AC/DC Auto-switching. The JSS-296 provides the optimum GMDSS system for the superior performance, compact, lightweight and highly efficient design of the units, which ensures easy operation for distress and safety calling as well as general communications.

Features

- R.R., SOLAS, CCIR Compliant
- TX: 1.6 to 27. %MHz (100Hz Steps)
- RX: 0.1 to 29.9999MHz (100Hz Steps)
- Power Output: 250W
- Power Supply: 100/110/120/220VAC

JSS-596 WITH MF/HF/DSC/NBDP

500 WATT MF/HF SSB Radio Telephone With DSC/ NBDP & Battery Charger
IMO Type Approved/GMDSS Compliant **$ 23,100**

The JSS-296 MF/HF SSB meets all the performance standards in accordance with IMO for SOLAS class vessels and complies with GMDSS. It is designed for vessels navigating A2, A3, and A4 Sea Areas. It consists of the JSS-296 Radio Telephone, ATU, DSC/NBDP Modem, Data Terminal Equipment, Keyboard, Power Amplifier, Battery Charger and AC/DC Auto-switching. The JSS-296 provides the optimum GMDSS system for the superior performance, compact, lightweight and highly efficient design of the units, which ensures easy operation for distress and safety calling as well as general communications.

Features

- IMO/GMDSS Compliant
- R.R., SOLAS, CCIR Compliant
- TX: 1.6 to 27. %MHz (100Hz Steps)
- RX: 0.1 to 29.9999MHz (100Hz Steps)
- Power Output: 250W
- Power Supply: 100/110/120/220VAC
- DISTRESS button cover to prevent inadvertent transmission
- Built-in high grade self-check function
- Built-in dummy load for checking ATU

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MF/HF GMDSS RADIO TELEPHONE

List Price

FS1570 / FS 2570

GMDSS Compliant MF/HF Radiotelephone/DSC Watch Receiver/ Telex

FS1570- **$ 8,395**
FS2570- **$ 9,895**

The FS-1570 and FS-2570 are new MF/HF radiotelephones for general communications and GMDSS applications. Provided in addition to radiotelephony operation are DSC (Digital Selective Call) on general communications and DSC Watch Receiver on all distress and safety frequencies in MF and HF bands. The FS-1570 and FS-2570 maintain a continuous watch on a distress call even while you are exchanging normal voice messages. DSC channels can be individually set or all selected channels can be automatically scanned. When a DSC message is received, the radiotelephone gives audible and visual alarms.
The FS-1570 and FS-2570 work on all authorized transmit frequencies between 1.6 and 27.5 MHz. Receiver frequencies are selectable between 100 kHz and 30 MHz in 10 Hz steps. The transmit and receive frequencies can be selected separately or in pair. The digital frequency synthesizer provides high frequency stability for DSC and NBDP as well as telephony operation. The compact cabinet allows a flexible and spacesaving installation in a communication console.
Optional equipment include a distress alert unit, received call unit, remote control unit and distress message control unit. In addition, a telex modem (NBDP) can be accommodated in the transceiver unit for general message transfer and distress message/maritime safety information handling, satisfying the carriage requirement in GMDSS A3- A4 sea areas.

Model	Power Output	Power Use
FS1570	150 WATT	24 VDC
FS2570	250 WATT	24 VDC

Standard Features

- Distress, safety and routine communications
- Fully meets GMDSS carriage requirements
- Instant selection of 256 preset channels
- 160-character message on high-legibility LCD display
- Optional NBDP modem and monitor
- Easy channel selection with rotary control or direct keyboard input
- Scanning of DSC frequencies for distress and general calls on MF/HF
- File editing for ready transmission of DSC message
- GPS position automatically included in a distress call

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ICOM

M-802

List Price

ICOM Digital Marine SSB Radio with Remote Control Head

$ 3,450

Big dials, a large dot-matrix LCD and well spaced buttons make Icom's newest SSB a snap to operate, even in rough seas. A full key pad, over 1300 channels, wide band RX, Ham band TX (license required) and RX included, one-touch e-mail access (a SSB first!) with no optional filters required, and many more thoughtful features make this remote control head SSB Icom's most advanced.

Standard 4 × 8 remote controller
The IC-M802 offers an industry-standard 4-inch tall (10.16 cm) remote controller. When set up with the IC-M502 VHF radio, Icom offers you a complete communications station.

Large LCD with dot matrix characters
You can easily read the alphanumeric name of any of the 1355 ITU channels at a glance with the large LCD dis- play. Nighttime operation is no problem with 10 levels (plus OFF) adjustable backlit display and keypad.

Easy to use in all conditions
The IC-M802 offers two large dials – bank and channel – for easy channel selection. Up to 16 banks of 20 (max.) each for user channels, and 17 banks for ITU channels are available.

Built-in digital selective calling
For added safety at sea, the IC-M802 offers the latest in one-touch DSC emergency communications technology. (ITU Class E standard.) The emergency button is covered by a red, spring loaded hatch to avoid accidental DSC activation.

Digital signal processor advantage The speech compressor, utilizing DSP, increases average talk power. Flexible filter settings provide for narrow band signals like e-mail, SITOR, FSK and other operation without an optional filter.

150W (PEP) of powerful output
150 Watts of power offers superior worldwide communications. A one piece, die cast aluminum chassis and a large cooling fan allow continuous transmission at full output power – very important for data communications, like e-mail.

One-touch e-mail access
An SSB first! The IC-M802 can be set to memorize your HF e-mail access frequency, mode and bandwidth settings. At sea e-mail has never been easier.
* Please consult with an HF e-mail provider for details.

Automatic antenna tuner, AT-140
An optional automatic antenna tuner, AT-140, easily connects to the IC-M802. When the tuner cannot tune the antenna, the IC-M802 bypasses the tuner and displays a warning indicator on the LCD.

Other features
Wide band receive coverage (0.5 – 29.9999MHz)
Remote control mic allows you to select channels directly
Accessory RS-232C port allows connection of modem, etc.
GPS input, NMEA 0183 version 3.01
A headphone jack in front of the controller

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FURUNO

SSB RADIOS, NON-GMDSS

List Price

FS1503/FS1503 EM

150 Watt Single Sideband Radiotelephone and Automatic Antenna Coupler **$ 2,895**

Power, versatility and quality performance are standard features of Furuno's FS1503 150 Watt , P-P Single Sideband (SSB) Radiotelephone. This rugged, splash-proof 150 Watt (max) radio is ideal for commercial fishing operations, extended cruising or any situation requiring long-range communication capabilities.

The FCC type-approved FS1503 incorporates the most advanced technology available and is built to withstand demanding marine conditions. It's also simple to use, thanks to a choice of rotary control or touchkey frequency/channel selection. Instant access to international calling, and distress frequency 2182kHz is available at the touch of a single button.

FS1503EM - 150 Watt Single-Sideband Radiotelephone and Automatic Antenna Coupler, with E-Mail Capabilities **$ 3,095**

The latest addition to Furuno's HF Radio line that has won the prestigious NMEA award for SSB/GMDSS for the past two years in a row, the FS1503EM is a 150 Watt, P-P Single Sideband (SSB) Radiotelephone. This rugged, splash-proof 150 Watt (max) radio is ideal for commercial fishing operations, extended cruising or any situation requiring long-range communication capabilities. The FS1503EM is 100% Sail-Mail/E-Mail compatible right out of the box, and is capable of full Marine HF Weather Fax reception.

The FCC type-approved FS1503EM incorporates the most advanced technology available and is built to withstand demanding marine conditions. It's also simple to use, thanks to a choice of rotary control or touchkey frequency/channel selection. Instant access to international calling, and distress frequency 2182kHz is available at the touch of a single button.

JRC

JSB-196 S

150 WATT MF/HF SSB Radiotelephone Without DSC - (Non-GMDSS) **$ 2,150**

The JSB-196S MF/HF Radio Equipment is a new generation of economical marine transceiver with high functionality. The JSB-196S functions to comply with the latest regulations for maritime MF/HF communications that also include a built-in Watchkeeping Receiver. This system covers the frequency range of 1.6 to 27.5 MHz. The equipment can be upgraded to meet the applicable regulations in accordance with IMO performance standards for A2 GMDSS.

Features

Installation – compact design allows for easy installation on large, as well as small vessels
Expandability – Provides HF E-mail communication by connecting to a modem and computer
Operation – Designed for user-friendly operation.
Digital Signal – Uses 32-bit floating point DSP for digital signal processing in and after the IF stage

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IMO APPROVED RADAR

List Price

From $ 15,750
to $ 19,650

JMA-5200 Series
Marine Radar

Target Enhancement

Developed exclusively by JRC, TEF™ allows target enhancement relative to the target size. The smaller echoes are far more enlarged than bigger echoes, giving a better on-screen separation and identification. TEF™ works by adding pixels to targets displayed on the radar image and allows a vastly improved degree of discrimination between targets. Sophisticated processing results in a proportional enhancement, where the relative enhancement of smaller targets are greater than applied to larger targets.

Flexible black box configuration

The processor unit is the heart of the JMA-5200Mk2, and shares the same simple configuration as its predecessor, contributing to an enhanced system configuration. Optional TT (Target Tracking) function module with up to 30 targets, and or AIS interface, plotter control unit can be built in.

This system is composed of the following components:

Display - 15 inch LCD color display

Keyboard
Processor
Antenna (6ft open array, 7ft open array, 9ft open array or 12ft open array)

List Price

From $ 22,200
to $ 40,500

JMA-5300 Series
Marine Radar

The JMA-5300 series represents a major advance in radar technology. The newly developed processing system gives users a range of new features not previously found on this class of radar.

Chart information can be combined with the radar image to present a complete overview of activity around the vessel. The radar image is combined with information from electronic charts. Own and other ship's tracks and AIS targets can be plotted and waypoints entered.

This system is composed of the following components:

Display - 18.1 inch Color LCD display, 250mm - (12 inch effective)

Keyboard
Processor
Antenna (6ft open array, 7ft open array, 9ft open array or 12ft open array)

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IMO APPROVED RADAR

List Price

JMA-7100 Series
Marine Radar

From $ 23,800
to $ 44,800

New Design
With its new case design, the keyboard of the JMA-7100 series allows you to carry out all radar operations simply by using the keyboard or on-screen by use of the trackball.
The responsive feel keys allow logical and precise operation and integrates function keys for one-touch access to EBL, VRM, GAIN, SEA and RAIN. This makes it easy to navigate through all common used tasks.
Clear On-Screen Info
The JMA-7100 series make your radar images more brilliant than ever with a sharp 19" high resolution LCD screen. Menu selections, via the keyboard or trackball are clearly shown on the display - allowing "at a glance" interpretation of the radar image. You can also select from multiple background modes e.g. day/dusk/night and adjust the brilliance at your own convenience
This system is composed of the following components:
Display - 19 inch LCD color display (12 inch effective)
Keyboard, processor, and Antenna (6ft, 7ft, 9ft, or 12ft open array)

List Price

JMA-9100 Series
Marine Radar

From $ 26,900
to $ 47,900

CCRP
As set by IMO regulations, a Consistent Common Reference Point (CCRP) is a location on own ship, to which all horizontal measurements, such as target range, bearing, relative course/speed, closest point of approach, or time to closest point of approach are referenced. Where multiple antennas are installed, different position offsets for each antenna in the radar system should be applied with respect to the CCRP. If you switch between scanners (up to 8 possible - option), the information displayed is generated allows for consistency and uniform output. This new feature is easily accessible from the menu.
More Built-In Ergo-Flexibility
The trackball is designed to work in perfect harmony with the operating system. One of the new features in this radar series is that you can effortlessly assign commonly used functions to the left mouse button, giving you the capability to access a preferred function without having to take your hand off the trackball. You can assign and reassign this multi-button with a range of operational features, which among others are AIS info, TT ACQ, show TT data, property, make mark.
This system is composed of the following components:
Display - 23.1 inch Color LCD display (16 inch effective)
Keyboard, processor, and Antenna (6ft, 7ft, 9ft, or 12ft open array)

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FURUNO

IMO APPROVED RADAR

FAR-21x7 Series

MARINE RADARS—20 INCH DISPLAY

The revolutionary FAR-21x7 series of X-band radars are the result of FURUNO's 50 years of experience in the marine electronics and advanced computer technology. This series of equipment is designed to meet the exacting standards of the International Maritime Organization (IMO) for ships of 1000 GT and more but less than 10000 GT. (NOTE:300 GT ships can carry this series of radars)

The display unit employs a 20.1" Color DVI-D LCD, providing an effective picture diameter of larger than 250 mm. The SXGA monitor provides crisp radar echoes, which are presented in a selected color with a day or night background color for easy observation all lighting conditions. Different colors are assigned for marks, symbols and texts for user-friendly operations.

A variety of radar antenna is selectable from; 4, 6.5, 8 foot radiator. For the X-band, the rotation speed is selectable from 24 rpm for standard radars or 42 rpm for HSC. The S-band radar FAR-2137S is also available with the antenna radiator 10 or 12 feet. The S-band radar assures target detection in adverse weather where X-band radar are heavily affected by sea or rain clutter.

Standard Features:

- Improved detection capability by new MIC and I/F amplifier
- High resolution DVI-D LCD display providing crisp echo images
- Two independent X- and S-band radars can be interswitched to meet SOLAS requirements on ships 3,000 - 10,000 GT
- Easy operation by customizable function keys, trackball/wheel palm module, and rotary controls
- Low spurious magnetrons meeting ITU-R unwanted emission standards
- Standard ARPA functions displaying 100 ARPA targets acquisition
- Display up to 1000 AIS symbols

MODELS AVAILABLE:

		List Price
FAR2117	**12KW 19 Inch LCD ARPA RADAR Without Antenna**	**$ 21,125**
FAR2127	**25KW 19 Inch LCD ARPA RADAR Without Antenna**	**$ 24,125**
FAR2137S/12	**30KW 19 Inch LCD and 12 Foot Open Array**	**$ 38,995**
FAR2157	**50KW 19 Inch LCD ARPA RADAR Without Antenna**	**$ 43,525**
FAR2167DS/12	**60KW 19 Inch LCD ARPA RADAR With 12' Antenna**	**$ 68,995**

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IMO APPROVED RADAR

FURUNO

FAR-28x7 Series

MARINE RADARS—23 INCH DISPLAY

The revolutionary FAR-28x7 series of X and S-band radars are the result of FURUNO's 50 years experience in marine electronics and advanced computer technology. This series of equipment is designed to meet the exacting standards of the International Maritime Organization (IMO) for ships of 10,000 GT and above.

The display unit employs a 23.1" LCD. It provides an effective picture diameter of larger than 340 mm. The SXGA monitor provides crisp radar echoes, which are presented in a selected color with a day or night background color for easy observation in all lighting conditions. Different colors are assigned for marks, symbols and texts for user-friendly operations.

A variety of radar antenna is selectable, from 4', 6.5' or 8' radiator. The rotation speed is selectable from 24 rpm for standard radars or 42 rpm for HSC. The S-band radar FAR-2837S is also available. The S-band radar assures target detection in adverse weather where X-band radar are heavily affected by sea or rain clutter.

Standard Features:

- Improved detection capability by new MIC and I/F amplifier
- High resolution DVI-D LCD display providing crisp echo images
- Two independent X- and S-band radars can be interswitched to meet SOLAS requirements on ships 3,000 - 10,000 GT
- Easy operation by customizable function keys, trackball/wheel palm module, and rotary controls
- Low spurious magnetrons meeting ITU-R unwanted emission standards
- Standard ARPA functions displaying 100 ARPA targets acquisition
- Display up to 1000 AIS symbols

MODELS AVAILABLE:

		List Price
FAR2817	**12KW 23.1 Inch LCD ARPA RADAR Without Antenna**	**$ 26,125**
FAR2827	**25KW 23.1 Inch LCD ARPA RADAR Without Antenna**	**$ 29,125**
FAR2837S/12	**30KW 23.1 Inch LCD With 12 foot Open Array Antenna**	**$ 43,995**

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FURUNO

SMALL RADAR

List Price

1623

$ 1,795

FURUNO 6 Inch Radar

Small in size, the 1623 is big on power, clarity and advanced radar features. The slim-line mono-chrome LCD display and lightweight radome antenna make it ideal for power or sail boats as small as 17 feet.

Display size	Antenna	Range	Power Output	Hor. Beamwidth
6 inch Mono LCD	15 inch Radome	16 Nautical Miles	2.2 kW	6.2 Degrees

1715

FURUNO 7 Inch Radar — $ 2,195

The MODEL 1715 is a high contrast LCD radar designed for pleasure craft and small fishing boats. Radar echoes are presented in four shades of gray on the 7" Silver Bright LCD. The Radar offers de-tailed pictures of coastline and targets at short ranges.

Display size	Antenna	Range	Power Output	Hor. Beamwidth
7 Inch Mono LCD	18 Inch Radome	24 Nautical Miles	2.2 kW	5.2 Degrees

1835

FURUNO 10.4 Inch NavNet Radar — $ 4,895

This new radar offers crystal clear target presentation with automatic Gain/Sea/Rain controls to de-liver noise-free radar presentation. It features superb detection of even small targets both at short and long range.

Display size	Antenna	Range	Power Output	Hor. Beamwidth
10.4 Inch Mono LCD	24 Inch Radome	36 Nautical Miles	4 kW	5.2 Degrees

1935

FURUNO 7 Inch NavNet Radar — $ 6,895

The MODEL 1935 Radar is a high contrast 10.4 color LCD radar designed for a wide range of vessels including pleasure craft, fishing boats and work boats. It features superb detection of even small tar-gets both at short and long range.

Display size	Antenna	Range	Power Output
10.4 Inch Mono LCD	3.5 Foot Open Array	48 Nautical Miles	4 kW

1945

$ 7,895

FURUNO 7 Inch NavNet Radar

The MODEL 1945 Radar is a high contrast 10.4 color LCD radar designed for a wide range of ves-sels including pleasure craft, fishing boats and work boats. This new radar offers crystal clear target presentation with automatic Gain/Sea/Rain controls to deliver noise-free radar presentation. It features superb detection of even small targets both at short and long range.

Display size	Antenna	Range	Power Output
10.4 Inch Mono LCD	4 Foot Open Array	64 Nautical Miles	6 kW

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FURUNO

SMALL RADAR

List Price

1832

FURUNO 10 Inch CRT Radar — **$ 4,495**

Engineered for 30'- 65' boats, the Furuno 1832 radar offers exceptional power, target detection and reliability. Featuring Furuno's custom microwave IC receiver design, this radar has a 10" diagonal CRT daylight-bright display with eight-level quantization.

Display size	Antenna	Range	Power Output	Hor. Beamwidth
10 Inch Mono CRT	24 Inch Radome	34 Nautical Miles	4 kW	3.9 Degrees

1942MK2

FURUNO 10 Inch CRT Radar — **$ 6,995**

Engineered for 30'- 65' boats, the Furuno 1942MK2 radar offers exceptional power, target detection and reliability. Featuring Furuno's custom microwave IC receiver design, this radar is packed with high-speed micro-processor technology and features that help you identify what's out there.

Display size	Antenna	Range	Power Output	Hor. Beamwidth
10 Inch Mono CRT	4 Foot Open Array	64 Nautical Miles	6 kW	1.85 Degrees

FR8062

FURUNO 12.1 Inch Color LCD Radar — **$ 10,720**

The FR-8062 radar is available with a 4- or 6-foot, open array antenna. They offer additional flexibility for river use and high-speed craft through their high-speed antenna rotation speed. The antenna rotation speed can automatically be adjusted to achieve optimum detection, making them perfect for displaying crisp radar images in intricate waterways or congested sea areas.

Display size	Antenna	Range	Power Output
12.1 Inch Color LCD	Not Included	72 Nautical Miles	6 kW

FR8122

FURUNO 12.1 Inch Color LCD Radar — **$ 11,720**

The FR-8122 radar is available with a 4- or 6-foot, open array antenna. They offer additional flexibility for river use and high-speed craft through their high-speed antenna rotation speed. The antenna rotation speed can automatically be adjusted to achieve optimum detection, making them perfect for displaying crisp radar images in intricate waterways or congested sea areas.

Display size	Antenna	Range	Power Output
12.1 Inch Color LCD	Not Included	72 Nautical Miles	12 kW

16920 28th Ave. N.
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U.S.A.

WTN Electronics, Ltd.

Tel: 763-473-3825
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Email: info@wtnltd.com

JRC

SMALL RADAR

List price

JMA-2300

The JMA-2300 RADAR series from JRC comes in two models available, the JMA-2343, which has a 4kW raydome, and the JMA-2344, which features a 3.9, 6kW open-array configuration. Both configurations utilize the latest in digital signal processing for excellent target identification and detection in a compact design.

- Latest digital signal processing for target detection
- 4kW transmitting output power for JMA-2343, and 6kW for JMA-2344
- NMEA 0183 RSD for cursor position data output
- Optional MARPA function
- Easy operation with soft key switch

JMA-2353 4kW with 24 inch RADOME ANTENNA $ 3,300
JMA-2354 6kW with 4 foot OPEN ARRAY ANTENNA $ 4,500

JMA-3300

JMA-3300 series is JRC's newest RADAR, featuring a 10.4-inch ultra bright LCD, and incorporates the latest digital signal processing for excellent target identification and detection in a compact design. A jog-dial integrates with the dedicated function keys for one touch access to GAIN, SEA AND RAIN operations. The JMA-3300 also incorporates4 soft-key switches just below the display that can be assigned by the user. Here you can specify commonly used functions, making it even simpler to navigate.

JMA-3314 4KW RADOME ANTENNA $ 4,750
JMA-3316 6KW 4FT OPEN ARRAY ANTENNA $ 5,750

JMA-5200Mk2-R XBAND RIVER RADAR

JRC's new JMA-5200Mk2 R-Series integrates the latest leading technologies with a set of new features specifically designed for the inland waterways.

This river RADAR edition of JMA-5200MK2 is a result of listening carefully to river boat captains and ownersm and developed specifically for the river boats. Our engineers went onboard river boats to optimize the signal processing.

JMA-5212-4BBR— 10 kW, 4ft Scanner, Without Display $ 9,060
JMA-5212-6BBR—10kW, 6ft Scanner, Without Display $ 9,260
JMA-5212-4HSBBR—10kW, 4ft Scanner, Without Display $ 9,690
NWZ-164—15" TFT LCD Display unit**,** with Desk Mount Bracket $ 3,150

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FURUNO

ECDIS

FEA-2107

LIST PRICE
$ 27,995

Furuno Electronic Chart Display and Information System

The FEA-2107 is FURUNO's ECDIS (Electronic Chart Display and Information System), which has been designed to fully comply with the latest standards and resolutions set by IMO, IHO and IEC. The electronic chart is compatible with ENC (S57 Edition 3) charts, C-Map CM93 ed3* and ARCS charts (RASTER CHARTS). Where the ENC chart is not available, the ARCS chart is used instead. Instant conversion is assured, as both chart databases are stored on the EC-DIS memory.

State-of-the-art technology has been utilized for high-speed stress-free data processing of chart and navigational data, which are over-laid on the chart. The navigational data includes: AIS and ARPA targets as well as a variety of other navigation information such as position, course, and speed. In the presentation of chart data, faster chart drawing and swift switching for presentation on/off of navigational data can be performed. When planning the voyage route, this gives quick route profile calculation and voyage optimization and continuous monitoring of huge navigational data, user actions and performance of the system.

The FEA-2107 can be interfaced with up to four sets of radar/ARPA FAR-21x7/28x7 by using of 100 Base-T Ethernet network. This allows high-speed data transfer and data sharing for navigational data within the network, which simplifies the system integration and the expandability of the system. The shared data can be accepted in both serial and analog format. For the display units, the FEA-2107 uses a 20.1" SXGA LCD. These high-resolution units provide clear and sharp pictures for comfortable observation. The presentation colors can be selectable from five patterns according to the ambient conditions of the bridge area for optimal viewing around the clock. The ergonomically designed control panel consisting of a keyboard, the trackball, thumbwheel and mouse buttons facilitates intuitive and comfortable operation.

Standard Features:

- The electronic chart can be overlaid with a variety of navigation data such as Radar echo images, ship's position, heading, speed and others to facilitate safe and efficient navigation.
- Compatible with ENC (S57 Edition 3) charts, ARCS charts and C-MAP CM93 ed3 (available in the near future)
- Complies with the following IMO and IEC regulations: IMO A.817(19), IMO MSC.64(67) Annex 5, IMO MSC.86(70) Annex 4, IMO A.694(17), IEC 61174 edition 2, IEC 60945 edition 4, IEC 61162-1 edition 2, IEC 61162-2 edition 1
- Flexible expandability allows the ECDIS to be networked with radar/ARPA, positioning equipment, autopilot and others to consolidate the navigation system
- Displays 200 AIS targets
- High-resolution 21" color LCD
- Ergonomically designed control panel provides ease-of-use
- Streamlined design
- User-customizable chart drawing function
- Navigation data for the past 12 hours can be recorded
- Track Control System when connected with autopilot (Option)
- True Motion and Relative Motion modes are available
- Navigation data is shared within an Ethernet network

- Display Unit: 100 - 230 VAC, 1 ø, 50/60 Hz
- Processor Unit: 100 - 230 VAC, 1 ø, 50/60 Hz
- LAN Adapter: 24 VDC
- B Adapter: 24 VDC

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JAN-701B

JRC 19" IMO Multifunctional ECDIS

ECDIS

LIST PRICE
$ 21,500

Features

The JAN-701 series Electronic Chart Display and Information System (ECDIS) is newly developed in response to the huge demand of multi-functional displays for practical use of ECDIS. It is ergonomically designed to enhance the working environment and man/machine interfaces, providing continuous position and navigational safety information.

Versions available

The JAN-701 has an 18.1-inch high resolution LCD display and is available in three versions:

- JAN-701EOO – ECDIS
- JAN-701EOR – ECDIS and radar
- JAN-701ECR – ECDIS, radar and conning

JAN-901B

JRC 23.1" IMO Multifunctional ECDIS

$ 24,500

Unique features

The JAN-901B is a newly developed multi-functional ECDIS. It is ergonomically designed to enhance the working environment and man/machine interfaces, providing continuous position and navigational safety information.

Radar overlay

The JRC JAN-901B offers practical radar usage with ECDIS, more than just overlaying a rough radar image. The radar image has a high resolution when interfaced with JRC radars. The radar image does not hide the priority objects of vector charts, but overlays them on the radar image. At the same time, brilliance and clutter controls of the radar images continues to be operable.

JAN-2000

JRC 19" IMO ECDIS

$ 14,000

Features

The new JAN-2000 is a high-performance and fully type approved ECDIS system with excellent on -screen menus, which will greatly shorten most users' learning period.

Cost-effective solution

The new JAN-2000 ECDIS system is fully type approved, and because of its controlled interface it is also highly cost-effective. It only has gyro, log and GPS as standard. TCS and radar overlay is not possible. This makes the JAN-2000 an economical and well-fitted ECDIS solution yet still integrates the high performance standard you would expect from JRC.

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IMO APPROVED GPS

List Price

JLR-7500

JRC 5.7" Monochrome LCD GPS/DGPS Display
IMO Type Approved/GMDSS Compliant **$ 1,965**

The new JLR-7500 GPS navigator will locate your position accurately and gives you a wide range of possibilities – integrated with the latest technologies – that will enhance your operational performance. The new (D)GPS navigator allows you to plan long distance routes highly effective. It is possible to set Rhumb lines (RL) for short legs, while Great Circle (GC) can be set for the long distance legs – all possible within the same route. Simply make your selection for each leg to reach your destination effortlessly.

JLR-7800

JRC 5.7" Monochrome DGPS Navigator with Antenna
IMO Type Approved/GMDSS Compliant **$ 2,290**

The new JLR-7800 (D)GPS navigator will locate your position accurately and gives you a wide range of possibilities - integrated with the latest technologies - that will enhance your operational performance. The new (D)GPS navigator allows you to plan long distance routes highly effective. The newly developed sensors includes RAIM, which is to access the integrity of GPS signals. If multiple satellite signals are picked up, this system will check if the position fix is consistent with the computed position, assuring higher reliability than conventional methods. The compact design of the JLR-7800 incorporates a new intuitive interface, providing enhanced ergonomics and user friendliness.

GP150/GP150D

FURUNO 6" Monochrome Display
GPS/DGPS/WAAS Navigator, IMO Type Approved

GP150 $ 2,295
GP150D $ 2,895

FURUNO GP150 is a highly reliable standalone EPFS (electronic position fixing system) that feeds positioning information to AIS, Radar, VDR, VideoPlotter, Autopilot, Echo Sounder and Sonar. Receiver dependability is improved by fault detection using five satellites, i.e., Receiver Autonomous Integrity Monitoring (RAIM) that shows the integrity status in Safe, Caution, and Unsafe levels. The status is given with respect to user selected accuracy level, 10 m or 100 m. RAIM also works on DGPS signals. The GP150 consists of an antenna and display unit. In order to improve position accuracy, WAAS and DGPS augmentation systems are available. Dual configuration, with a second system, provides a backup and/or remote operation to ensure system availability. In the Highway mode, you can intuitively see how to steer and where the next waypoint is located relative to your ship.

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FURUNO

GPS COMPASSES

SC-30
Furuno Satellite Compass

List Price
$ 2,695

The SC30 Satellite Compass provides highly accurate attitude information for navigation equipment such as radar, plotter, autopilot, fish finder and sonar. It can be used for a wide variety of applications on any type of vessel. The SC30 comes with a compact GPS antenna and built-in processor. This all-in-one system delivers incredibly accurate heading and roll & pitch information as well as heaving information, GPS position, SOG (Speed Over Ground), COG (Course Over Ground) and ROT (Rate Of Turn) data.

SC-50
Furuno Satellite Compass

$ 4,995

This Satellite Compass utilizes Furuno's advanced GPS Kinematic technology. Satellite Compass performance is not affected by ship's speed, latitude, geomagnetism, etc. This hybrid integration of GPS receiver technology and a 3-axis solid-state rate sensor provide accurate and steady heading information, even when bridges or tall buildings block satellite signals. Unlike conventional magnetic and gyro compasses, accuracy is not affected by G-force or velocity. Furthermore, when compared to other GPS based compass systems incorporating only two antennas, our addition of a third GPS antenna provides enhanced accuracy while reducing the negative effects of pitch, roll, and yaw.

Display	Power Use	Receiver Type
4.5" Mono LCD	12 or 24 VDC	26" Dome

SC-110
Furuno GPS Compass with GPS Kinematic technology

$ 10,395

This hybrid integration of GPS receiver technology and a 3-axis solid-state rate sensor provide accurate and steady heading information, even when bridges or tall buildings block satellite signals. Accuracy is not affected by G-force or velocity. The SC110 offers highly accurate GPS WAAS Data for SOG, COG, ROT, and L/L.

Display	Power Use	Receiver Type
4.5" Mono LCD	12 or 24 VDC	34" Tri-Antenna

JLR-21/31
JRC GPS Compass Heading Sensor

JRC

JLR-21 $ 3,950
JLR-31 $ 6,750

Features

The JLR-21/31 GPS compass continues the success of its predecessor, reaching a new level of performance and stability with many new features and enhancements. This system is also known as a 3D Dynamic Sensor™, which besides giving heading information, is designed to provide highly accurate information of the ships movement in all axis.

Heave compensation

The JLR-21/31 has heave functionality built-in as standard. In rough ocean conditions (with high waves), the GPS compass can correct up and down (attitude), movement. This is especially useful for fish finders and sonars on fishing vessels where high waves are compensated for with up to 20 cm accuracy, providing better potential for a profitable catch.

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RITCHIE® SMALL COMPASSES

VOYAGER

- Built-in green NightVu night illumination
- Built-in compensators
- Scientifically matched sapphire jewel and hardened steel pivot dial movement

Color	Dial	Mount	Man. Part #	LIST
Black	Flat	Bracket	B-80	$ 150.00
Black	CombiDial	Bracket	B-81	$ 150.00
Black	Flat	Deck	D-84	$ 153.00
Black	Flat	Flush	F-82	$ 142.00
White	Flat	Flush	F-82W	$ 142.00
Black	CombiDial	Flush	F-83	$ 142.00
White	CombiDial	Flush	F-83W	$ 142.00
Black	Flat	Racing	RU-90	$ 128.00

HELMSMAN

- Green NiteVU night illumination
- Movable sun shield
- PowerDamp flat dial
- 45 degree lubber lines
- Compensator for easy adjustment

Color	Dial	Mount	Man. Part #	LIST
Black	Flat	Bracket	HB-740	$ 217.00
Black	Flat	Deck Mount	HD-744	$ 235.00
Black	CombiDamp	Deck Mount	HD-745	$ 235.00
Black	Flat	Flush	HF-742	$ 212.00
White	Flat	Flush	HF-742W	$ 212.00
Black	CombiDamp	Flush	HF-743	$ 212.00
White	CombiDamp	Flush	HF-743W	$ 212.00
Black	CombiDamp	Bracket	HB-741	$ 217.00

STEEL BOAT & COMMERCIAL

- Special anti-vibration mount isolates dial
- Hardened steel pivot and sapphire jewel movement
- Built in compensators

Color	Mount	Man. Part #	LIST
Black	Bracket	HB-845	$ 490.00
Stainless	Binnacle	B-200P	$ 840.00

Accessories:

NAVIGATOR

- Green NiteVu night illumination
- Powerful DirectiveForce magnets
- 45 degree lubber lines
- High temperature construction
- Available with CombiDamp or

Color	Dial	Mount	Man. Part #	LIST
Black	Flat	Flush	FN-201	$ 355.00
Black	CombiDamp	Flush	FN-203	$ 370.00
White	Flat	Flush	FNW-201	$ 355.00
White	CombiDamp	Flush	FNW-203	$ 370.00
Stainless	Flat	Binnacle	DNP-200	$ 479.00
White	Flat	Binnacle	DNW-200	$ 479.00
Black	Flat	Binnacle	DNB-200	$ 479.00
Black	CombiDial	Bulkhead	BN-202	$ 376.00

SUPERSPORT

- Internal gimbal systems
- 45 degree lubber lines
- Powerful DirectiveForce magnets
- High temperature construction
- Exclusive 5 year warranty

Color	Dial Size	Mount	Man. Part #	LIST
Black	3 3/4	Flush	SS-1002	$ 240.00
White	3 3/4	Flush	SS-1002W	$ 240.00
Black	4 1/2	Flush	SS-2000	$ 420.00
White	4 1/2	Flush	SS-2000W	$ 420.00
Black	5	Flush	SS-5000	$ 736.00
White	5	Flush	SS-5000W	$ 736.00

GLOBEMASTER

- Ideal for both power and sail boats
- Lightweight/easy to align
- 45 and 90 degree lubber lines
- Full internal gimbals
- Green NiteVu 12 volt night lighting
- Built-in compensators

Color	Mount	Man. Part #	LIST
Black	Binnacle	SP-5B	$ 835.00
Stainless	Binnacle	SP-5C	$ 835.00
Black	Flush	FB-500	$ 722.00

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KVH SMALL COMPASSES

103AC DIGITAL COMPASS

LIST $ 795.00
MFG #01-0115

- Remote display provides easy-to-read heading, windshift, and off course steering info
- Easy to install
- Automatic compensation ensures the highest degree of accuracy
- Waterproof, backlit LCD with large numerals

Accessories:

Description	Man. Part #	LIST
Sailcomp 2nd station display	02-0407	$ 245.00
Sailcomp remote key pad	02-0493	$ 99.00

AUTOCOMP 1000 HEADING SENSOR

- Precision stand-alone heading sensor for sail, power, and OEM applications
- Remote sensor with continuous auto compensation
- Variants for use aboard sailboats and power vessels
- NMEA 0183 output standard

Description	Man. Part #	LIST
Sensor for power vessels	01-0118-0001	$495.00
Sensor for sailing vessels	01-0117-0001	$495.00
Sensor for power vessels w/ remote display	01-0145	$545.00

AZIMUTH 1000

LIST $ 535.00
MFG #01-0148

- Digital fluxgate compass & LCD display in one compact unit
- Easy-to-read heading, compass rose, and off-course steering
- NMEA 0183 output
- Automatic compensation ensures highest degree of accuracy

**1000 White, LIST $ 535.00 MFG #01-0148-01*

SMART HEADING SENSOR

LIST $ 891.00
MFG #E12102

Raymarine®

- Significantly improves radar/chart overlay
- Significantly improves MARPA Target Acquisition, retention, and calculation of tracking data
- Provides the same gyro stabilized heading information as the "G" family of autopilot core packs

RATE COMP HEADING SENSOR

LIST $ 995.00
MFG #PG500R

FURUNO®

The PG500R heading sensor produces compass data that can be utilized in NMEA0183 and Furuno AD10 formats. Typical applications include true radar echo trail and true motion by integrating with auto pilots, video plotters, scanning sonars and more.

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WEATHERFAX

FURUNO

List Price

FAX-408

FURUNO 8 Inch Weather Facsimile Receiver/Recorder **$ 3,395**

The FAX408 provides weather charts and satellite images in nine gray levels on 8" thermal paper. Electronic scanning and thermal head printing in nine shades of gray produce high quality facsimile images, while minimal mechanical components allows for an incredibly quiet operation. All known facsimile channels in the 2-25 MHz band are pre-programmed, and an additional 164 user-programmable channels are available. Fully automatic operation as available via programmable schedule timer.

Additional Features:

- Fully automatic selection of speed, IOC, phase alignment and frequency. Manual selection also available
- ISB shift function tracks frequency of SSB multiplex broadcasts whose frequencies typically shift 1-2 kHz
- Signal from external receiver may also be recorded
- Automatic start/stop circuit provided in accordance with WMO standard
- Automatic channel selection by judging the quality of signal reception
- Full automatic operation by a built-in schedule timer (16 programs can be set per week for automatic operation)

JAX-9B

JRC

JRC 10 Inch Weather Facsimile Receiver **$ 2,795**

The JAX-9B weather facsimile receiver is a very compact and lightweight solution, incorporating a set of enhanced features that allows for flexible operation.

- Flexible Operation: Automatic, Manual, Forced, or Timer programme Recording
- Recording Paper: 10" Paper
- Power Supply: DC12/24/32V

Fine half-tone recording - Pictures of clouds can be recorded in 16 gradation levels. This digital method ensures high resolution recording, using a proprietary system that finely reproduces maps and latitude and longitude grids with very fine and accurate lines.
Synthesized receiver - The Built-in synthesized receiver is capable of setting any receiving frequency from the ten -key pad, and is able to preset up to 90 spot frequencies in the memory. This feature is very effective when receiving any new broadcast frequency and changing the station frequency.
Compact, lightweight design - The JAX-9B weather fax is remarkably compact and lightweight, allowing for a more flexible installation approach in confined spaces.
New enhanced interfaces - All received faxes can be displayed on your own OC, allowing you to view (and save) the image before seeing the actual recorded image. This function allows you to quickly view the image digitally, which greatly facilitates the need for immediate decisions. On top, the JAX-9B can also be configured for remote maintenance. JRC has developed a unique function that is capable for remotely monitoring and analyzing for any faults that may occur in the system, allowing for prompt action and service.

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ANEMOMETER

Model 05106

RM YOUNG Wind sensor

Wind speed is displayed in your choice of units: KNOTS, MPH, KM/H, M/S. Maximum wind speed is saved on the display until reset by the operator. Wind direction information is clearly displayed on a circular pattern of LEDs. Bold front panel graphics give a quick indication of wind angle relative to vessel heading. Brightness control allows adjustment for best viewing in any light. Luminous front panel markings allow viewing even in a darkened pilothouse.4-20 mA inputs, Serial NMEA, and Voltage outputs are standard on the Marine Wind Tracker. Alarms for both wind speed and wind direction are included.

Wind Speed Range
1-100 MPH
0-50 M/S
0-200 KM/S
0-100 KNOTS

Wind Direction Range
0-180 degrees (port & starboard

Model 85000

RM YOUNG Ultrasonic Anemometer

The sensor features durable, corrosion-resistant construction with opposing pairs of ultrasonic transducers secured in a streamlined molded frame. The 85000 is fully wind-tunnel tested and calibrated to provide accurate wind measurement over a wide operating range. The standard sensor includes many useful output options. Analog voltage outputs are provided for wind speed and wind direction. A variety of serial output formats are also available on the standard sensor. These include ASCII text, RMYT (compatible with YOUNG displays), NMEA and SDI-12 formats. The sensor installs on readily available 1 inch (IPS) pipe. Wiring connections are made in a convenient weatherproof junction box; special mounting adapters, connectors and cables are not required.

Wind Speed Range	Accuracy
0-156 MPH	(30 M/S) ± 2%
0-70 M/S	(70 M/S) ± 3%

Wind Direction Range	Resolution
0-360 degrees	0.1 M/S

Model 06206H

Marine Wind Tracker Display

The Marine Wind Tracker is very compact. Face size is 144 mm x 144 mm to fit standard DIN panel configurations. Depth is 36 mm for easy mounting on vertical bulkheads or wall surfaces. 12-30 VDC input power enables the Wind Tracker to be powered by ship's batteries. A universal mounting bracket and AC wall adapter are included. Model 06260 Protective enclosure offers extra protection for wet or dusty locations. This display can be used with either the Young Wind Tracker 05106 or the Ultrasonic Anemometer 85000.

FURUNO DEEPSEA WORLD

FURUNO®

Economical, new standard of echo-sounding equipment

NAVIGATIONAL ECHO SOUNDER

Model FE-700

- Cost-effective; No paper, no consumables; high accuracy and high reliability
- 6.5" color LCD display featuring a wide viewing angle and adjustable brightness
- Viewing window 15 min wide on any range setting with 1 min time marks
- Choice of system frequency - high-resolution shallow depth sounding with a 200 kHz transducer or deep water sounding with a 50 kHz transducer
- Various modes for experienced users with never-get-lost default position
- Compact display cabinet enabling installation at a conning position or any other convenient location
- Depth data for last 24 hours in memory to play back the past sounding information
- Digital interface for radar, VDR, ECDIS, and other navigational or radiocommunication equipment
- Meets IMO standards MSC.74(69) Annex 4

ISO 9001 LLOYD'S REGISTER QUALITY ASSURANCE
NATIONAL ACCREDITATION OF CERTIFICATION BODIES

The future today with FURUNO's electronics technology.

FURUNO ELECTRIC CO., LTD.
9-52 Ashihara-cho, Nishinomiya City, Japan Telephone: +81 (0)798 65-2111
Telefax: +81 (0)798 65-4200, 66-4622, 66-4623

Catalogue No. E-380a

TRADE MARK REGISTERED
MARCA REGISTRADA

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NAVIGATION ECHOSOUNDER IMO APPROVED

JRC

JFE-380

List Price

JRC 6.5" IMO Echo Sounder — **$ 5,040**

- Compact sized display unit (6.5" TFT LCD)
- No paper (Optional: External printer is available)
- High accuracy and high reliability
- Depth data for last 24 hours in memory to play back the past sounding information
- Meets IMO standards MSC.74 (69) Annex 4

JFE-680

List Price

JRC 10.4" IMO Echo Sounder — **$ 5,245**

- High-resolution and clearly display (10.4" TFT LCD)
- Built-in printer for copy of the echogram history
- High accuracy and high reliability
- Depth data for last 24 hours in memory to play back the past sounding information
- Meets IMO standards MSC.74 (69) Annex 4

FURUNO

FE-700

FURUNO Navigational Echo Sounder — **$ 5,495**

The FE-700 is a result of 50 years of Furuno's vast range of experience and advanced microelectronics technology fields in developing echo sounders, sonars, and underwater application equipment and systems. This echo sounder is a breakthrough over the conventional paper eating sounders; there are no consumable items. The purpose of the echo sounder is to provide safe navigation by detecting the clearance below the ship (particularly in shallow waters) as required on the SOLAS Convention ships by the new IMO standards.

- 6.5 Inch Color LCD Display
- 2,500 foot range
- 50 or 200 kHz frequencies
- 600 Watt Power Output

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DOPPLER SPEED LOG

JRC

JLN-205

List Price

JRC Single Axis Doppler Log

$ 8,400

The JLN-205 Doppler Log - Tank Mount is designed as a device of ship speed measurement and information. The JLN-205 utilizing high frequency of ultrasonic wave brings high stability and accuracy of speed measurement. In addition, a miniaturized transducer will enable to install on the bow where it is in less influence against tiny bubbles.

JLN-550

JRC Dual Axis Doppler Speed Log, IMO - Approved

$ 25,500

The JLN-550 Doppler Sonar - Tank Mount is a 2-axis, 4-beam Doppler Sonar using dual frequencies designed to provide ship speed information with higher stability than earlier systems. The new system utilizes a lower ultrasonic frequency of (240kHz) which is adequate to measure the ship's speed over ground to greater depths than previous systems, and then shift to the higher ultrasonic frequency of (2 MHz) that measures ship's speed over water. The new transducer, although designed for dual frequency transmission, is smaller in size than that of the more conventional models. The JLN-550 can also be upgraded for input from ROT units and can provide Athwart ships speed both fore and aft for docking purposes.

FURUNO

DS-80

Furuno Speed Log with Doppler Effect

$ 10,495

Unlike an electromagnetic speed log or other type, this equipment does not require a sensor protruding through the ship hull; this greatly reduces the routine maintenance. Another special feature is the capability to measure own ship speeds at dead slow movement with high accuracy. The pair-beams at 1 MHz sonic frequency ensure accuracy in rough water.

The primary functions of the DS80 operate without any interaction. Simply keep the power switch on. The user-friendly menu ensures easy adjustment of all functions. Auxiliary functions such as resetting the Distance Run and speed offset are easy using the menu. Optional analog and digital remote displays are available to enhance the convenience of navigation.

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JRC

AIS

List Price

JHS-182

JRC AIS (Automatic Identification System) **$ 3,930**

The JHS-182 AIS is the worlds most compact Class "A" Universal AIS, designed for space saving installation. The system consists of (3) components: AIS Transponder, Connection Box and AIS Controller. The JHS-182 also has capability for a second display. It requires only a single, standard coaxial cable to the transponder which houses both the GPS and VHF antennas. The built-in Pilot Plug is located in the rear of the Controller and an External Pilot Plug is available as an option if the installation requires it. Auxiliary Output ports provide expanded connection capabilities to ECDIS and Radar.

The system is capable of regularly broadcasting own ship's unique information as well as receiving and displaying information broadcast from other ships in the VHF band, using new SOTDMA technology. The ship's information includes vessel name, cargo and navigational information such as ship position, COG and SOG is displayed on a large, 6.5" LCD screen. IMO, FCC and USCG Type Approved.

- The single-unit structure combining the antenna with the transponder guarantees maximum power transmitted and received and easy installation.
- Offers interfaces for Radar, ECDIS and other peripherals.
- The function of displaying a fellow ship's identification is provided.
- On-Line maintenance support is available. (Remote Diagnostics System)

Specifications

Frequency Range:	156.025 to 162.025MHz Default channels: CH87B: 161.975MHz, CH88B: 162.025MHz
Channel Spacing:	25kHz / 12.5kHz
Frequency Accuracy:	Within +/-3 X 10^{-6}
Type of Emission:	G1D (F1D), G2B (F2B)
Modulation / Bit Rate:	GMSK, FSK / 9,600bps
Transmission Power:	12.5W / 2W
Type of Display:	6.5" Monochrome LCD (320 X 240 dots)
Keyboard:	7 keys
Back-light:	For LCD and keyboard

Standard System Components

NTE-182	AIS Transponder, including VHF (1 m) whip Antenna
NQE-3182	Connection Box
NCM-779	AIS Controller
N-P-10U	Coaxial Connector
7ZCJD0214A	33'(10m) Control Cable
7ZXJD0049	Spare Parts
INSTALJHS182	Installation Manual (English)
OPERJHS182	Instruction Manual (English)

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AIS

List Price

FA-150

FURUNO AIA (Automatic Identification System) **$ 4,495**

The FA150 is a shipborne Universal AIS (Automatic Identification System) Transponder capable of exchanging navigation and ship data between own ship and other ships or coastal stations. The FA150 consists of a transponder unit and a compact display unit with 4.5" Silver Bright Display. The compact FA150 display is designed to accomodate a simple and space-saving installation with a user-friendly ergonomic design.

The transponder unit contains a VHF transmitter, two TDMA receivers on parallel VHF channels, a DSC channel 70 receiver, interface processor and internal GPS receiver. The GPS receiver is a 12 -channel all-in-view receiver and has Differential capabilities (DGPS). The GPS receiver provides UTC reference and also provides position, COG and SOG in the event that a connected external GPS receiver fails.

The FA150 provides multiple interfaces for Radar, ECDIS and PC. The available Combo GPS/VHF antenna affords flexible, easy installation.

The FA150 provides the following data:

- MMSI (Maritime Mobile Service Identity)
- IMO Number (where available)
- Call sign & vessel name
- Length and beam
- Type of ship
- Location of position-fixing antenna on ship
- Ship's position with accuracy indication and integrity status
- UTC
- COG, SOG and Heading
- ROT (Rate of Turn) where available
- Ship's draught
- Navigation status
- Hazardous cargo (type)
- Destination and ETA (at captain's discretion)
- Short safety-related messages and free messages.

The FA150 complies with IMO MSC.74(69) Annex 3, A.694, ITU-R M.1371-1 and DSC ITU-R M.825. It also complies with IEAC 61993-2 (Type testing standard) and IEC 60945 (EMC and environmental conditions).

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AIS

ACR Nauticast2 Workboat AIS

ACR Automatic Identification System

List Price
$ 4,290

Nauticast$_2$™ AIS Workboat Automatic Identification System
Product: 2609

ACR Nauticast AIS systems make a significant contribution to increasing safety at sea.

Size it up! The Nauticasts alluring measurements are W 28 cm x D 20 cm and its height is only 6 cm. Its a lightweight at 2.5 Kg, and wont take up precious space on your bridge, even though keyboard and display are integrated.

AIS at Your Fingertips: The Nauticast product line by ACR has taken AIS technology further and fully explored its unifying properties and diverse application possibilities. The underlying principle of AIS technology lies in the provision and receipt of data from multiple sources. The Transponder sends, receives and processes own vessel, other vessel, and shore-based navigation data at as well as distributing it to all participants of an AIS network.

The Perfect Companion at Sea: The Nauticast family of AIS systems is perfectly cut out for bridge integration. It blends in neatly thanks to it's compact design its the world of AIS, held in one hand! The Nauticast$_2$™ stays in the background, automatically and continuously transmitting vessel type, course, destination, cargo and more. It is thoroughly unobtrusive, yet remains continuously on the alert - only demanding attention when an alarm or error message requires action.

Being There: The Nauticast systems allow the user to take on the perspective of his neighboring vessels, to see what they see, and to virtually participate in their maneuvering activities. The Transponder can look around corners a very useful feature for inland waterway navigation, and see through even the thickest fog. It is never interfered with by extreme weather conditions or busy vessel traffic environments.

Precision, Along with Flexibility: Precise traffic data is the sound basis for supporting flexible navigation. The ACR Nauticast$_2$™ AIS collects, processes and conveys data from various system sources. At ACR, we speak the maritime language and our Nauticast product line formats AIS data in a clear, precise fashion so that it is understood by all.

Quality: Our AIS products undergo stringent quality testing and have been awarded a great number of international type approvals, with thousands of AIS transponders out in the market, the Nauticast brand is a tried and tested system, which has already gained substantial market penetration in this young market. For over 50 years, ACR has built quality products knowing they are used to save lives. Our internal processes and manufacturing are ISO 9001:2000 approved, therefore ensuring customer orientation and service reliability.

- All-in-One kit includes AIS transponder, VHF & GPS antennas, data cables, and pivot-mounting kit.
- The most compact AIS-system available, pivot mounting bracket included (flush mount available)
- The Man Over Board button saves the precise coordinates of the incident and immediately generates a distress message to surrounding vessels.
- ECDIS port adapter directly interfaces with your ECDIS display.
- The Nauticast$_2$™ Transponder is specifically designed to fulfill NON-SOLAS carriage requirements in the United States.

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LONG RANGE IDENTIFICATION AND TRACKING (LRIT)

SAT-202-LRIT

EMS LRIT (Long Range Identification and Tracking)

LIST PRICE:
$ 795

SAT-202-LRIT - Long Range Identification Tracking Solution
The SAT-202-LRIT solution fully complies with the International Maritime Organization (IMO) mandatory SOLAS V/19-1, Long Range Identification & Tracking regulations. It provides regular reports to designated flag authorities, identifying:

- Ship ID
- Ship position
- Date and time of the ship position

Why this Solution

- Lowest cost solution available today - no hidden extras. True for both vessel operator and flag state.
- Ideal solution for vessels that either do not have compliant equipment or where the cost of upgrading existing equipment is prohibitive.
- Proven technology, using the reliable Inmarsat IsatM2M low data rate packet protocol.
- Easy to install and is pre-configured out-of-the-box ready. All necessary equipment is included within the package.
- Low profile for discreet installation.
- Seamless global coverage across all major ocean regions and unlike other satellite systems, will automatically roam between geostationary satellites.

The SAT-202-LRIT is the smallest Long Range Identification and Tracking product on the market making it ideal for discreet maritime installations where security is paramount.

The equipment utilizes the Inmarsat IsatM2M protocol which is one of the most cost-effective satellite services on the market and therefore ensures complete compliance at the lowest cost for both the vessel operator and the Flag State. The package includes the satellite modem, mounting bracket and a 20m cable – everything you need for a successful installation. There are no hidden extras.

SAT—202 LRIT INCLUDES:

- SAT-202 Activated with LRIT Script—Part Number: A115B06
- 20m Extension Cable— Part Number: A023B04
- Mast Mount—Part Number: A027B01
- Mounting Plate—Part Number: A028b01
- Installation Manual

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SHIP SECURITY ALERT SYSTEM SSAS

Honeywell

List Price

OCEAN ALERT

SATAMATICS SSAS (Ship Security Alert System) **$ 2,995**

Satamatics Ocean Alert - Ship Security Alert System (SSAS) is an end-to-end security alert solution that enables the maritime industry to comply with new SSAS regulations, while matching operational requirements to a range of budgets.

The SAT-202 is a compact, single piece unit, which provides a low data rate service. It has an integral 50 channel 3D GPS receiver and provides three inputs for sensor monitoring and one low-voltage digital output suitable for driving relays and indicators, all of which are user configurable. The data-logging functions include GPS positions, transmissions and data for more than 6,500 entries. The SAT-202 provides accurate, reliable and low cost satellite communications for tracking, rapid alerting and mobile asset management in security and other mission-critical applications.
The SAT-202 offers direct interfaces to most application environments without the need for additional external circuitry, significantly reducing system integration costs.

Quick Facts

- Incorporates the latest technology, including a new integral 50-channel 3D GPS receiver
- Data-logging functions include GPS positions, transmissions and data for more than 6,500 entries
- Simple to install, easy to configure and requires low power consumption

Advanced Terminal Technology

Each asset is fitted with a SAT-202 terminal. When out in the field the unit automatically selects the most appropriate satellite depending on its GPS position. The message is then sent via secure systems before being delivered to the designated recipient. Like many of EMS Global Tracking's terminals, the SAT-202 utilizes the Inmarsat constellation of satellites via the IsatM2M standard. This service delivers an affordable and reliable direct-to-desktop information service with fast message handling and high-quality service.

• Locate, track and communicate with mobile assets
• Safeguard personnel, fleets and cargo
• Monitor fixed assets

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SHIP SECURITY ALERT SYSTEM SSAS

Thrane & Thrane

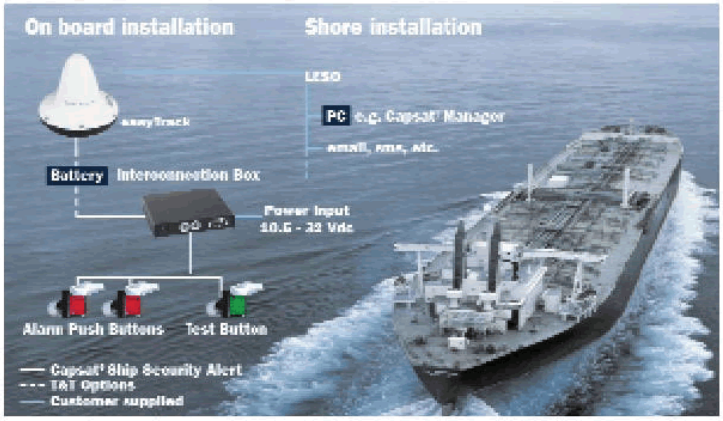
List Price

TT-3000SSA

$ 3,600

Capsat Ship Security Alert System

The SAILOR TT-3000SSA System is based upon the well-known and reliable Inmarsat-C service, known for its unique role in maritime safety and for more than a decade an integral part of the IMO's GMDSS (Global Maritime Distress and Safety System). It has been developed by Thrane & Thrane to supply customers with a system that fulfills the new SOLAS requirements from IMO (International Maritime Organization).



Features

The Sailor TT-3000SSA system from Thrane & Thrane presents the owner with the following benefits.

- **Reliability:** Based on the existing Inmarsat-C service, renowned for reliability and for more than a decade part of the Global maritime Distress and Safety System.
- **Cost-effectiveness:** No monthly subscription fees – one time installation cost only. Airtime costs charged per transmission only.
- **Ship Security Alert:** The SAILOR TT-3000SSA alerts are sent as covert message. This functionality enables direct routing to a selected destination address. The system enables secure remote configuration of destination addresses. System test and end-to-end test-alert functionality.
- **Flexibility:** Total flexibility in routing to anti piracy centers, e-mail addresses, GSM phones, fax, telex, telephone modems and other Inmarsat-C terminals.
- **Tracking features:** The SAILOR TT-3000SSA System offers the opportunity to use additional fleet tracking software, which will enhance Vessel Monitoring Systems (VMS) and fleet tracking possibilities.
- **Support:** Full support by the Thrane & Thrane global distributor and partner network, with more than 10 years experience in delivery, installation and support of Inmarsat C-systems.
- **Quality:** Elevation is -15 degrees ensuring operation even in high sea. Developed to meet your needs at sea. Thrane & Thrane products are your assurance of quality, durability, constant reliability and ease of use.

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SHIP SECURITY ALERT SYSTEM SSAS

JUE-95 SA

JRC JUE-95 SSAS

List Price:

$ 2,730

The JUE-95 SA is a small, lightweight and highly reliable terminal, recognized for its unique role in maritime safety and plays an integral part in the safety of live at sea.

Compact Solution

JRC has developed a compact, mobile satellite communication system. The JUE-95SA Inmarsat C SSAS utilizes two-way data/messaging communications anywhere in the world. New IMO requirements state two security alarm buttons must be provided. These are located discreetly on the vessel and can be activated in case of piracy or terrorist attack. It will allow covert activation which transmits an alert signal from vessel to shore, alerting the appropriate authority that the security of the vessel is under threat or has been compromised. The SSAS system will not raise the alert onboard the vessel, nor alert any other ships. If vessels have older Inmarsat C systems onboard, you can simply install JRC's JUE-95SA in order to comply with current SOLAS regulations.

About SSAS

Ship Security Alert Systems (SSAS) is a system that contributes to the IMO's efforts to strengthen maritime security and suppress acts of terrorism and piracy against shipping. In case of attempted piracy or terrorism, the vessel's SSAS function can be activated and appropriate law-enforcement or military forces can be alerted.

Self-Diagnostics

JRC's mobile JUE-95SA terminal incorporates various self-diagnostic programs to facilitate maintenance and troubleshooting, reporting any possible problems it might suffer. The results are displayed on the data terminal. These functions will allow for easy maintenance and more reliability. In addition, automatic testing for performance verification and commissioning via the satellite channel is also available.

Inmarsat Mini-C SSAS

Model: JUE-95 SA	Item Number	Quantity
1 Set Consists of:		
EME/Antenna Unit	NAF-742SA	1
IME/ Main Unit	NTF-782SA	1
SSAS Buttons	NQE-3154A	2
SSAS Set-up Tool	7YZC0005	1
EME/IME Coaxial Cable	CFQ-5924A3	30M

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FURUNO

SHIP SECURITY ALERT SYSTEM SSAS

FELCOM16/SSAS/INT

List Price

Inmarsat Mini-C Mobile Earth Station w/SSAS (International Version) **$ 3,095**

The FELCOM 16 / SSAS facility is a Ship Security Alert System (SSAS) based on Inmarsat mini-C mobile earth station. The standard performance of the FELCOM 16 / SSAS facility meets the requirements of IMO MSC. 136(76) and MSC. 144(77). The Inmarsat mini-C system is proven for VMS (Vessel Monitoring System), guaranteeing high security alert performance.

The system is intended for transmitting a security alert when the ship is under attack by pirates, terrorists, etc. It notifies a preset flag administration on land that the ship is under threat, without generating any audio/visual alarms to prevent others onboard from sensing that a security alert is transmitted. Its multi-addressed transmission function enables reports to a ship's owner as well as to a flag administration in parallel.

The information transmitted includes ship's current position and identification. Ship's position, obtained by using the built-in GPS receiver, is sent at regular intervals so that a flag administration and the ship owner are kept informed of the position of the ship. A backup battery is available as an option to drive the system up to five days for continual data transmission. Furthermore, its polling function enables tracking of a ship even after the loss of ship's communication.

The FELCOM 16 / SSAS facility can be easily installed anywhere in the bridge thanks to its compact size. To generate the alarm is simple; just flip up the protection cover and press the alert button. There is no need for setting of the system. Additionally, all Inmarsat Mini-C services are also available when connected to a PC.

Standard Features:

- Complying with IMO resolution MSC.136(76), MSC.144(77), MSC/Circ.1072
- Also complying with IEC 60945, IEC 61162
- Employs Inmarsat Mini-C system
- Multi-addressed transmission enables in parallel reports to a flag administration as well as to company security officer in parallel
- Optional backup battery for continual operation up to 5 days
- GPS receiver incorporated
- Compact antenna and communication unit for ease of installation
- Polling function enables tracking of a ship even after the ship loss the communication
- Data reporting function enables reporting of ship's position at regular intervals

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SIMPLIFIED VOYAGE DATA RECORDER (S-VDR)

VR-3000S
S-VDR

FURUNO

Data Recording Unit (fixed type)

Data Collecting Unit

S-VDR VR-3000S

Standard:

- Data Collecting Unit VR-3010 (built in removable HDD) 1 unit
- Data Recording Unit VR-5020 (with 30 m cable and cradle) 1 unit
- Remote Alarm Panel VR-3016 1 unit
- Microphone VR-5011 or Water resistant
- Microphone VR-3012W 6 sets
- LivePlayer Pro software

Optional:

- Removable HDD for DCU (40 GB)
- Junction Box IF-8530 - 1 unit
- Radar Interface Board RI-3010 - 1 unit
- VHF Interface IF-5200

Power Supply:
100-230 VAC, 50-60 Hz

The VR-3000S consists of Data Collecting Unit (DCU), Data Recording Unit (DRU), Remote Alarm Panel and up to six microphones. Incorporating interface modules, a powerful processor and status monitor into a compact container, the DCU collects voyage data. The DCU processes the data and events in the order of occurrence, while old data is overwritten by the latest data for storage in the DRU. The data is stored for at least 12 hours. In case of power supply failure, the reserve battery enables the S-VDR to record the bridge audio for two additional hours. The data recorded in the DRU can be replayed with the playback software application, Liveplayer Pro for incident investigation as well as for educational briefing purposes. The DRU is contained in a protective capsule to ensure survival and recovery of the recorded data following an incident. The incorporated acoustic pinger helps investigators locate the capsule underwater.

JCY-1850
S-VDR

JRC

List Price
$ 19,900

Features:

- Compact flashcard: no moving parts
- Easy IP based maintenance
- External recording on PC: 180GB for 60 days
- User-friendly real-time playback software
- Global service network

Operation panel Interface conditions:

- Microphone: 9 ports
- VHF Audio: 3 ports
- IEC-61162-1/2 (NMEA): 16 ports
- Radar (Option): 2 ports
- NSK: sync/step/pulse unit
- Analogue (Option): 32 ports max.
- Contact (Option): 256 port max.

JRC's second generation S-VDR incorporates the latest technology to aid a safer nautical future. JRC uses self fabricated reliable, marinised hardware, purposely designed for the S-VDR. The non PC-based equipment ensures spare parts availability for many years. L3 is one of the main suppliers of flight recorders to the aircraft industry. They have proven themselves in the VDR market with a share of approximately 70%. L3 delivers one of the smallest and lightest S-VDR capsules in the market. A reliable platform is created by using an optimized operating system. No unnecessary software components guarantee a stable environment. JRC gives continuous support through its offices and network of over 270 fully trained agents around the world. Mount the black-box at a convenient location to make all necessary interfacing. The separate operation panel can be located on the bridge for easy-access to status and alarm information. Standard LAN output enables you to connect up to 4 different PC's* by use of a hub.* All S-VDR data, including radar video, can be stored on these PC's. 3GB storage capacity per day is required if you would like to save the data on your computer. This gives you the possibility to easily playback, select and send data. JRC includes playback-software that also incorporates realtime monitoring functionality on the user PC. The acquisitioned data can be displayed as both graphical and numerical. Standard CSV data conversion enables easy and efficient exchange of information to shore, e.g. by e-mail.

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S-VDR & AIS NMEA INTERFACES

Universal Gyro Repeater

UGI-417

The UGI-417 is an Analog/Digital converter/interface. It can convert the analog output of Gyro Compass and Log to data output. The output sentence IEC61162-1/2can be used for AIS, VDR and IBS. It fullmeets the requirements of IMO and IEC61162-1/2.
Power Supply: 18-36 VDC
Output Ports: 2 X RS422, 1 X RS232

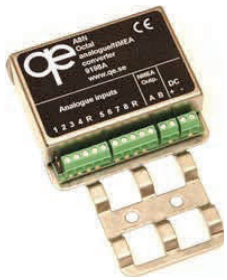
NMEA Buffer

The NMEA Buffer module is the best solution for buffering weak NMEA sources, allowing NMEA devices to be driven, such as chart plotters, radars, and/or an on-board PC/ Laptop.

NMEA Converter

Model A8N

For ship's bridge integration, VDR and S-VDR, there is a need to interface various analogue sensors from various systems to standard IEC 61162-1/NMEA messages. The A8N Converter converts up to 8 analog inputs to RS/485/422 NMEA outputs.



NMEA Multiplexer

This NMEA Multiplexer/Combiner allows connection of up to five NMEA (National Marine Electronics Association) inputs, and multiplexes/combines them to its two fully isolated NMEA outputs.

Universal NMEA Converter

Universal NMEA Converter is a "Multi Analog Signal to NMEA -0183 (IEC-61162-1) Converter" for most kinds of Gyrocompass, Anemometer, Speed Log, Rudder. The Universal NMEA Converter is useful for interfacing between old navigation equipment and VDR, AIS, ECDIS.

NMEA Buffer/Isolator

The NMEA Buffer/Isolator has 1 NMEA signal input port and 2 NMEA output ports. Input ports, Output ports and Input power are fully isolated with each others. This NMEA Buffer can receive any type of serial data such as RS-422 (NMEA), RS-232, 5V TTL signal for input, and has protection circuits such as high voltage protection.

NMEA Combiner (Multiplexer)

The NMEA Combiner (NMEA Multiplexer) combines up to 8 NMEA-0183 input data and let out it through 2 NMEA-0183 output ports and 1 RS-232 port. This is very useful for any equipment such ECDIS and VDR required receiving various NMEA-0183 data from many devices (multiple talkers – single or multiple listeners environment).

NMEA Autoswitch

The NMEA Autoswitch from allows the data from up to four NMEA (National Marine Electronics Association) input devices to be switched to a single NMEA output, by determining the highest priority device with good data.

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IMO Requirements

What are the international requirements **for marine horns (ship's whistles)?**

The 1972 Intemational Regulations for Preventing Collisions at Sea ('72 COLREGS), ANNEX III, entered into force by the International Maritime Organization (IMO), specifies the technical requirements for sound signal appliances on marine vessels. Frequency range and minimum decibel level output is specified for each class of ship. The class is determined by the vessel's length. Sound pressure level intensity at a distance of one meter from the horn is stipulated, which determines the theoretical range of the horn, although the actual range will, under many conditions, be much greater than this. This infor-

Whistle Class	Length of Vessel in Meters	Limits of Fundamental Frequency	Minimum Sound Pressure Level Measured in 1/3 Octave Band at 1 Meter	Audibility Range in Nautical Miles
I	> 200	70-200 Hz	143 dB	2
II	75-200	130-350 Hz	138 dB	1.5
III	20-75	250-700 Hz	130 dB	1
IV	< 20	250-700 Hz	120 dB	0.5

Certificates of Conformity
Certificates for Kahlenberg Horns have been issued by the U.S. Coast Guard, ABS, and the British MCA, among others, confirming their compliance with the '72 COLREGS.

Installation
The '72 COLREGS also give recommendations relating to the installation of whistles with which installers and operators should be familiar.

Selection:

Kahlenberg Whistles in Each Class			
Class I	Class II	Class III	Class IV
Vessel Length Over 200 Meters (650 ft.)	Vessel Length 75 -200 Meters (246 -656 ft.)	Vessel Length 20-75 Meters (65-246 ft.)	Vessel Length Under 20 Meters (65 ft.)
S-203C S-203CHT KPH-130	S-216C S-216CHT S-203C S-203CHT D-4A Q-4 T-4A KPH-130	S-2 S-2CV S-2CHT D-1 D-2 D-2CVL T-1 T-2 T-3A Q-3A F-2 F-3 KDT-123 O2M KB-20	S-0A D-0A T-0A

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Commercial/Military Horns and Whistles

These Kahlenberg Air Horns and Electric Horns were developed to withstand the punishing use of commercial and military service. The durability of these air and electric horns has been demonstrated over decades of service on ocean-going vessels ranging from naval warships to shrimp boats. Military specifications have required extensive testing for many of these horns and the accessories supplied with them, which have proven the exceptional qualities of Kahlenberg horn design and manufacturing.

All Kahlenberg Air Horns and Electric Horns meet or exceed IMO Requirements. Certificates of Conformance to the regulations are supplied upon request and with every order.

HORNS FOR VESSELS LESS THAN 20 METERS (65 FT.) IN LENGTH

Zero Series Air Horns

Kahlenberg Zero Series Air Horns are the perfect choice for any vessel under 20 Meters in length. Due to their low air consumption, any of the three air horn models shown can be operated with a very small oil-less compressor system. See the accessories section for details. All three models are available in brass, chrome, or white powdercoat finish.

HORNS FOR VESSELS 20 to 75 METERS (65 TO 246 FT.) IN LENGTH

Air Horn Models S-2, S-2CV, S-2CHT

Designed for use on vessels up to 75 Meters in length, the Model S -2 Air Horn is available in several variations. The S-2CV Air Horn includes a combination manual/electric solenoid valve and air strainer/filter, while the S-2CHT adds a heated enclosure for extreme weather service.

Model S-2

Air Horn Models D-2, D-2CVL

The D-2 Air Horn includes two projectors, each producing a different fundamental frequency. This unique sound has made the D-2 Air Horn the most popular air horn used on U.S. commercial vessels under 75 Meters in length. Model D-2CVL Air Horn includes a combination manual/solenoid valve, air strainer/filter, and maneuvering light.

Model D-2

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MARINE HORNS & WHISTLES

Air Horn Models T-1 through Q-3A

Also certified for use on vessels up to 75 meters in length, the models shown include additional "Chimetone" frequencies. These additional frequencies combine to create a powerful musical chord that assists in penetrating onboard background noise.

Model T-3A

Model Q-3A

Air Horn Model KB-20 Electric Horn

Certified for vessels under 75 meters in length, the KB-20 Electric Horn is a self-contained unit that does not require an air or steam source of any kind. The heated, self draining driver assembly eliminates the possibility of condensation or extreme weather affecting the unit. Operating on 24 Volts D.C., the KB-20 Electric Horn is also available with an optional A.C. power supply for use with 50 or 60 Hz electrical systems.

Model KB-20

HORNS FOR VESSELS OVER 75 METERS (246 FT.) IN LENGTH

Air Horn Models S-216C/S-203C, S216CHT/S-203CHT

Model S-216C and S-216CHT Air Horns are certified for vessels between 75 and 200 meters in length. Model S-203C and S-203CHT are certified for vessels between 75 and 200 meters **and** vessels over 200 meters in length. The "CHT" suffix in each air horn model number indicates the addition of a heated enclosure surrounding the operating valve and diaphragm assembly.

Model S-203C

Model S-203CHT

Model KPH-130 Electric Piston Horn

Model KPH-130

Certified for all vessels over 75 meters in length, the Model KPH-130 Electric Piston Horn utilizes a 7.5 horsepower electric motor to drive a piston which oscillates air at 130 Hz. With an entirely oil-less crankcase and gear case, steel gears, anti-condensation heating and a self-draining cylinder assembly, the KPH-130 Electric Piston Horn is a highly reliable ship's whistle requiring virtually no maintenance. Installation costs are minimal since no air or steam piping is required.

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Fax: 763-473-3521
Email: info@wtnltd.com

SATELLITE 406 EPIRB

List Price

PRODUCT NO. 2874

ACR Automatically deployable 406 MHz EPIRB with Bracket **$ 795**

- The ACR Satellite series has quietly built a strong reputation in the commercial and recreational marine industry. This redesigned workhorse utilizes patented, proprietary electronics package for faster, more stable 406 MHz transmissions to low-earth orbiting LEOSAR satellites. In an emergency, your registered, digitally-coded distress message is broadcast via a powerful 6-watt, 406 MHz signal (typically within 1 hour). An integrated 121.5 MHz homing signal then guides local Search and Rescue efforts.
- Upgrade to GPS positioning with the optional GPS interface cable (sold separately). This connects the Satellite3 406™ to your vessel's GPS receiver to continuously update and store precise position data. GPS positioning provides SAR notification typically within 2-15 minutes.
- The automatic category I Sea Shelter3™ bracket is fully enclosed and is made of high density, UV-stabilized polyethylene for years of extreme abuse, while the manual category II QuickDraw™ has a low profile and is easy to rail mount or secure on deck.

PRODUCT NO. 2875

ACR Manually deployable 406 MHz EPIRB **$ 650**

- This redesigned workhorse utilizes patented, proprietary electronics package for faster, more stable 406 MHz transmissions to low-earth orbiting LEOSAR satellites. In an emergency, your registered, digitally-coded distress message is broadcast via a powerful 6-watt, 406 MHz signal (typically within 1 hour). An integrated 121.5 MHz homing signal then guides local Search and Rescue efforts.
- Upgrade to GPS positioning with the optional GPS interface cable (sold separately). This connects the Satellite3 406™ to your vessel's GPS receiver to continuously update and store precise position data. GPS positioning provides SAR notification typically within 2-15 minutes.
- The automatic category I Sea Shelter3™ bracket is fully enclosed and is made of high density, UV-stabilized polyethylene for years of extreme abuse, while the manual category II QuickDraw has a low profile and is easy to rail mount or secure on deck.

Features:

- High Efficiency Electronics
- Audio/Visual Indicators of Active Transmission
- Automatic Activation
- When out of Bracket and in Water
- Marine Tough Design for Years of Useful Service
- Non-Hazmat Battery
- Made in the U.S.A.
- Lead Free

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SATELLITE 406 EPIRB

List Price

Smartfind E5

McMurdo 406 MHz EPIRB - Category 1, Automatic Activation	**$ 649**
McMurdo 406 MHz EPIRB - Category 2, Manual Activation	**$ 549**

Meeting the demands of both commercial mariners and recreational boaters, the new McMurdo SMARTFIND heralds the arrival of the next generation in EPIRB technology. This compact and stylish unit is available as a standard 406 MHz EPIRB

Key Features:
Stylish and compact

- GMDSS compliant
- Non-hazardous battery for safe and easy transportation
- High brightness LED flashing locator lights
- Comprehensive diagnostic and self-test facilities
- 5 year warranty
- 5 year battery life

Activation Method	Water or Manual
Battery Replacement (Years)	5
Built-In Strobe	Yes
Category	I or II
Floats	Yes
Frequency	406/121
GPS Enabled	No
Operational Life (Hours)	48

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SART

List Price

PRODUCT NO. 2714

ACR Survival Craft Radar Transponder for Search and Rescue Operations **$ 917**

The ACR Pathfinder3 SART Search & Rescue Radar Transponder (Model #2714, *formerly #2708*) enhances radar returns with 12 intense blips, the first blip represents the SART. This unit only transmits when interrogated by 9 GHz radar, which is standard on search and rescue craft. Includes integral vessel mounting bracket, pole and 10 meter (33 ft) lanyard for security. This manually activated SART has a Test mode that allows testing of the transponder with visual and audible feedback. The Hi-Viz yellow, high impact polystyrene, materials that are designed to withstand rugged environments comprise the construction.

Features

- Enhances radar returns with 12 intense blips, whereby the first blip represents the SART
- Unit transmits through the 9.2-9.5 GHz band marine radar when interrogated by radar
- Vessel mounting bracket and collapsible pole stowed inside SART
- Exclusive ACR Test mode for visual/audible feedback
- High impact polystyrene case designed to withstand rugged environments
- Compact 12.5 x 3-in unit easily packs into life raft
- 10 meter (33 ft.) lanyard for security
- Waterproof to 10 meters (33 ft)
- Requires lithium battery (5-year replacement life)
- Worldwide certification; complies with IMO/GMDSS, approved by USCG, MED
- Operational Life - 96 hours in stand-by mode; in excess of 8 hours in operational mode
- Application: mandatory requirement for all vessels governed by GMDSS; any yacht or vessel carrying more than one life raft to accommodate crew and passengers

- Size: 12.5" x 3"
- Weight: 1.5 lbs.
- Waterproof: 10 meters (33 ft.)
- Frequency: 9.2-9.5 GHz (X-band)
- Battery Type: Lithium (5 year replacement life) (10 year useful life)
- Operating life: 96 hour in stand by mode / 8 hours operational mode
- Certification: Worldwide; complies with IMO / GMDSS, approved by USCG / MED

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SART

List Price

S.701 SART

Search and Rescue Transponder

$ 795

The S.701 Search & Rescue Transponder (SART) has been designed to fulfill and exceed the requirements of X-band Marine Search & Rescue Radar Transponders as specified for use within the GMDSS community. It has been designed and built using the most modern components available, and offers several features which give it significant advantages over earlier generation SARTs. It has been Type Approved to both the FCC and EU MED requirements and carries the 'Wheelmark' symbol. It also has Greek and Ukraine certification.

Specifications

- EU MED .Wheelmark. approved
- Designed for .carry-off. and integrated life-raft applications
- Ultra-slim (only 40mm thick!), light-weight, automatic or manual activation
- S.701 model includes mounting bracket, 10 meter buoyant tether and mounting straps
- Specify S.701-L/R model for liferaft fit
- Telescopic mounting pole option S.701MP Frequency range: X-band, 9.2 to 9.5 GHz

It has been specifically designed with life-raft fitment in mind, as well as conventional 'carry-off' use. It is capable of auto activation in liferaft installations, and is one of the smallest and lightest SARTs available today. Its exceptionally low power consumption makes it the first SART that can be shipped globally as NON-HAZARDOUS goods - making it much simpler, quicker and cheaper to ship and stock. And its unique digital design brings new levels of sophistication, with reduced component count and increased reliability.

Two models are currently available. The S.701-C/O model is the full Carry-Off version, with mounting bracket, tether, and straps. It can be fixed to any convenient bulkhead or wall. The S.701-L/R is the liferaft version, supplied on its own to make the most of its ultra-slim profile and stow easily inside the raft. It can be arranged to activate automatically as the raft inflates. An optional 1 meter telescopic mounting pole is also available.

The S.701 SART from is the result of many years experience in the specification, design, manufacture and use of SARTs and related marine safety equipment. It brings together the ultimate in high-reliability design, modern manufacturing techniques and 'designed-in' ease of deployment. It produces an instantly recognizable “12 dot” radar return to direct rescue vessels.

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EPIRB & SART BATTERIES

REPLACEMENT BATTERIES FOR ALL YOUR EPIRBS & SARTS

Original Manufacturers' Equivalent TYPE APPROVED Replacement Batteries

- ACR
- Graseby
- Graseby Nova
- McMurdo
- Plessey
- Nekon
- Landsborg
- ASAMAT
- Lokata/Kelvin Hughes
- Litton/Koden
- Litton/Guest
- STC
- Northern Telecom/MTI
- JRC
- Skanti/ECI
- NEC
- Annitsu
- Zenicall
- Taiyo-Musen
- CEIS-TM
- Musson

...And more...

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PORTABLE GMDSS VHF RADIO

ICOM

IC-GM1600K

ICOM GMDSS Portable VHF for Survival Craft

The IC-GM1600K meets temperature, thermal shock, vibration and drop resistant (from 1 m height) requirements. After passing those environmental tests, the IC-GM1600 sustains 1m depth waterproof construction specified with IMO resolutions A.809(19), A.694(17) and IEC 61097-12.

Optional high capacity Lithium battery, BP-234, has superior low temperature characteristics
Provides more than 8 hours operating time even at -20°C
Large keypad with positive button action
Wide viewing angle LCD display
"Speed water removal" system removes water from the speaker grill

Additional features
One touch access to Channel 16 and call channel
Highly visible yellow colored body
Bright LED indicator on the top of panel
Optional VOX headset for on-board use

AXIS 30 GMDSS

The new AXIS 30 radio *(Navico)* is purpose-designed as a GMDSS compliant emergency handheld VHF. It is ideally suited for use in a liferaft, although it can also provide emergency communications in the event of a vessel losing electrical power. The AXIS 30 features a removable lithium battery that gives an amazing 15 hours use, and will hold charge for up to five years.

In keeping with ease-of-use approach, AXIS 30 can be operated with no previous training. It has large, clear, illuminated controls, enabling full use of the radio in total darkness. It is also reassuring to know that

AXIS 50 GMDSS

As the latest addition to the range, the AXIS 50 provides a competitive solution for both on board and emergency use. Although smaller than its predecessor, the AXIS 50 provides a similar level of performance. Its high efficiency antenna gives the best possible range, whilst maximizing battery life. All the features expected on a modern handheld are provided. The clear LCD shows channel, operating and battery status, and can be illuminated for night time use.

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SAILOR

PORTABLE GMDSS VHF RADIO

SAILOR SP3500 Portable Series

The SAILOR SP 3500 Portable series is composed by seven high-quality, robust portable radios.

All radios build on the strong reputation of the SAILOR brand of being reliable, powerful and very user-friendly. Developed and designed with the user in mind, a perfect grip, large tactile buttons and easy to read display and only some of the many features and functionalities that make these radios the ideal working tool for any professional user.

SAILOR SP 3500 Model Numbers:

- SAILOR SP 3510—Portable VHF
- SAILOR SP 3515—Portable VHF with Scrambler and CTCSS

* **SAILOR SP 3520—Portable VHF GMDSS**

- SAILOR SP 3530—Portable VHF ATEX
- SAILOR SP 3540—Portable VHF ATEX GMDSS
- SAILOR SP 3550—Portable UHF
- SAILOR SP 3560—Portable UHF ATEX

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PORTABLE GMDSS VHF RADIOS

List Price

TRON VHF TR 20

GMDSS Hand Portable Maritime VHF Radio **$ 820**

Rugged VHF radio for emergency situations and regular use for onboard communication. Waterproof and even floats. Easy to operate by one hand or wearing gloves.

Channels: 11 channels, including channel 16. Channel 6, 13, 15, 17 and 67 as standard. Channel 73, 77, 8, 9, 71 as reprogrammable. Optional selection of headsets and helmets with integrated headset for various applications.

Complies with IMO/SOLAS/GMDSS regulations.
FCC approved.
NATO Stock No. 5820-25-151-1960.

ACR SR203

Hand Portable VHF GMDSS Survival **$ 890**

The ACR SR203 GMDSS Survival Radio meets all the requirements of the IMO for carriage on SOLAS vessels.

The digital display and control buttons are backlit making operation in low light environments simple. Once activated, the SR203 is automatically tuned to Channel 16 and has a single push Channel 16 call button to quickly return to the emergency channel.

The SR203 boasts exceptional battery life of over 16 hours thanks to its highly efficient transmitter designed to maximize battery life. The innovative battery protection tab means the primary battery can be permanently attached to the radio without fear of losing its charge. The radio will always be available for use in times of emergency without the need to remove protective labels or the like before use. Simply break off the red protective tab and the radio will be immediately ready to turn on to channel 16.

Features:

- Efficient transmitter
- Rugged design
- Primary Lithium battery exceeds GMDSS requirements
- Protective battery tab
- Non-hazardous batteries
- 16 hours typical operating life
- Optional rechargeable battery kit
- Laser etched control buttons
- High contrast/backlit digital display and keypad
- 21 Channels

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JRC

NAVTEX

List Price

NCR-333 Series

NCR-333 NAVTEX Receiver for GMDSS with Active Antenna	**$ 1,420**
NCR-333 APDC NAVTEX with Antenna, Printer, and DC Power Supply	**$ 2,100**
NCR-333 APAC NAVTEX with Antenna, Printer, and AC Power Supply	**$ 2,395**

The NCR-333 is the latest NAVTEX Receiver from JRC. It is supplied with a 5.7 inch wide LCD screen and Automatic tune function by GPS.

Features

- Meets latest IMO regulations
- 3 receiving frequencies
- Printerless type
- Easy Installation
- Easy Operation
- External Printer (optional: LIST $495.00)
- Navtex data sending function for INS (ECDIS or etc.)

FURUNO

NX-700 Series

NX-700 NAVTEX Receiver without Printer	**$ 1,895**
NX-700P NAVTEX Receiver with Printer GMDSS	**$ 2,695**

FURUNO NX-700 is a dual-channel NAVTEX receiver for SOLAS ships complying with the new NAVTEX performance standard MSC.148(77) which is implemented on and after 1 July 2005.

The NX-700 can receives two channels simultaneously. One is set for 518 kHz to receive international NAVTEX messages and another is selectable from 490 or 4209.5 kHz for domestic or local NAVTEX messages. These messages include a variety of safety information such as Navigational Warnings, Meteorological Warnings, Search and Rescue (SAR) information and other information for ships sailing within the reach of each service station's coverage. The broadcast station can be selected automatically according to own ship position when the NX-700 is connected with a GPS navigator.

Every incoming message is stored in non-volatile memory and is displayed on a clear 5" silver bright LCD. Three different font sizes are available and can be selected from the menu.

The NX-700 has a low profile, stylish display, receiver and antenna units. An external Serial (RS-232) printer can easily be connected for message printing. Another model, the NX700P, is also available which incorporates a built-in printer. The compact, umbrella-type H-field antenna requires no grounding. In addition, the antenna incorporates a high-performance preamp within the compact body, which gives reliable and uninterrupted reception without an extra whip antenna.

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BRIDGE NAVIGATION WATCH ALARM

List Price

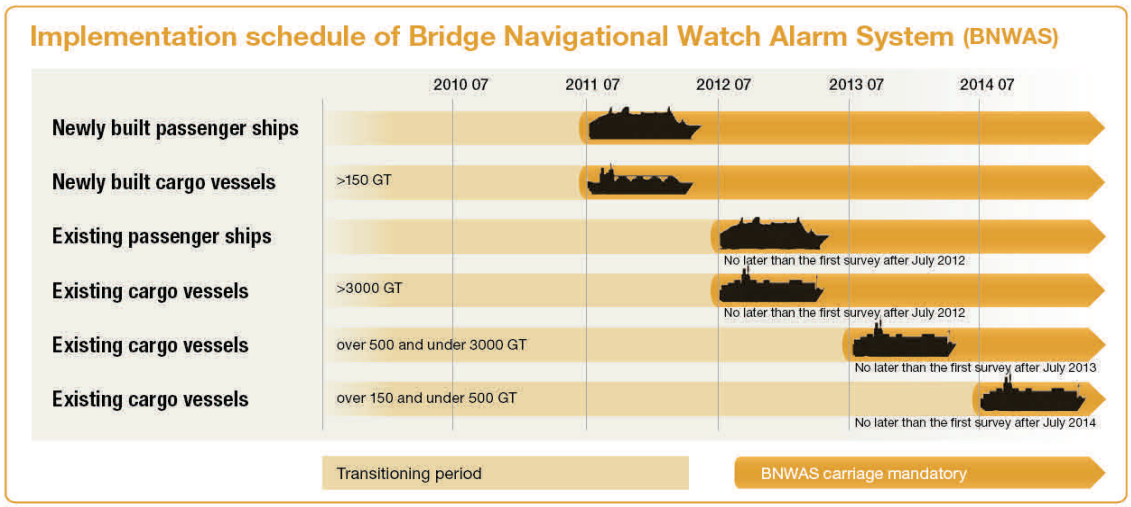
FURUNO BR500

IMO Compliant Bridge Navigational Watch Alarm System **$ 2,595**

Furuno is pleased to introduce our new, IMO compliant BR500 BNWAS (Bridge Navigational Watch Alarm System). In its simplest form, BNWAS is an alarm/alert system that will sound various alarms on the bridge, as well as in navigator staterooms and living quarters, if it senses inactivity on the bridge for a predetermined period of time.

The Furuno BR500 BNWAS monitors the watch officer's presence through watch safety system functions. A watch officer is required to press the button on a Timer Reset Panel or to operate navigation equipment (i.e.: ECDIS, Radar, etc.) at certain preset intervals. If the officer fails to press the button, operate connected equipment or trigger optional motion sensors within preset intervals, visual and audible alarms will be generated in the wheelhouse. If the officer doesn't respond to the alarm, the BR500 transfers the alarm to the Cabin Panels installed in other sections of the vessel in order to inform backup officers of the watch officer's incapacity.

BNWAS will be required equipment for all IMO vessels, mandated by regulation MSC.128(75). July of 2012 will be the primary fitting date for most vessels (existing passenger vessels and existing cargo vessels of 3000+ GT).


Implementation schedule of Bridge Navigational Watch Alarm System (BNWAS)
2010 07
2011 07
2012 07
2013 07
2014 07
Newly built passenger ships
Newly built cargo vessels
>150 GT
Existing passenger ships
No later than the first survey after July 2012
Existing cargo vessels
>3000 GT
No later than the first survey after July 2012
Existing cargo vessels
over 500 and under 3000 GT
No later than the first survey after July 2013
Existing cargo vessels
over 150 and under 500 GT
No later than the first survey after July 2014
Transitioning period
BNWAS carriage mandatory

In addition to being fully compliant and competitively priced, the Furuno BR500 offers a unique, easy to install design. Our external processor is perfectly sized, providing ample space to easily connect and secure all cables, yet small enough to install in a convenient, accessible location. A single cable (up to 50m) connects the processor and our compact control head, making display placement very flexible.

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BRIDGE NAVIGATIONAL WATCH ALARM

List Price

JRC JCX-151

JRC IMO Compliant Bridge Navigational Alarm System **$ 5,970**

Features

The Bridge Navigational Watch Alarm System (BNWAS) main purpose is to monitor the presence of watch officers and their alertness for early detection of unsafe sailing conditions. JRC's BNWAS is also able to manage other onboard equipment alarms. When any connected equipment alarm is activated, the BNWAS displays a list of alarm information automatically. When the officer fails to acknowledge within pre-set intervals, visual and audible alarms will be generated in the wheelhouse and other crew spaces as necessary.

Alarms

The JCX-151 initiates a visual indication and alarm with the following sequence.

The user can define an interval sequence of between 3 and 12 minutes. This will only give a visual indication. The alarm can be reset at any point in time. There is a visual indicator of the time countdown. After the preset interval, an alarm sequence will go into effect.

1. First stage is a 15s visual alarm on the bridge.
2. Second stage is a 15s audible alarm on the bridge.
3. Third stage is a 90s audible alarm in the back-up officer and/or master's area.
4. Fourth stage (when the 90s audible alarm is not reset) the crew area will have audible alarm.

Resetting

The JRC BNWAS system has a range of standard (and optional), possibilities to reset the timer for visual indication and audible alarm. By simply connecting the BNWAS to JRC navigation equipment, such as the JMA-9100 series radars or JAN-901B ECDIS, the alarm is temporarily disabled when the watch officer is physically operating the controls.

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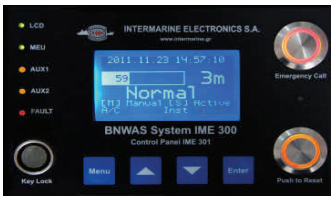
BRIDGE NAVIGATIONAL WATCH ALARM

INTERMARINE MODEL IME 300 BNWAS

The most advanced reliable and cost effective technology. All BNWAS units are based in the latest micro processor technology with flexible and field customized hardware and software. Meets all and future IMO requirements as well as EC directives: IEC 62616, IEC 60945, IEC 61162, IEC62288, IMO resolutions A.694 (17), A.813 (19), A.830 (19), MSC.128 (75), MSC252 (83), MSC.74 (69), MSC.Circ.982, MSC.191. Furthermore, has been tested and approved against E.U.s directive 2010/68/EU A.24.32 (amendments of 96/98 EC) so as to grant wheel mark approval when BNWAS moves from section A.2 to A.1

The IME 300 BNWAS Includes The Following Items

List Price:
$ 2,690

1. MAIN ELECTRONIC UNIT (MEU) 1.1 Main PCB with Microprocessor 1.2 Power supply with charger 1.3 Rechargeable batter 12V 5 Ah	(1 piece)		IME 302
2. CONTROL PANEL 2.1 GRAPHIC LCD 7X4cm 2.2 Rest LED backlit button 2.3 Emergency call backlit button 2.4 Internal buzzer 2.5 i-lock switch + i-locks	(1 piece)		IME 301
3. RESET PANEL	(1 piece)		IME 303
4. REMOTE ALERT PANEL	(3 pieces)		IME 304
5. PIR detectors	(3 pieces)		IME 305
6. LED beacons	(2 pieces)		IME 307
7. Selector switch (optional)			IME 309

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VEINLAND

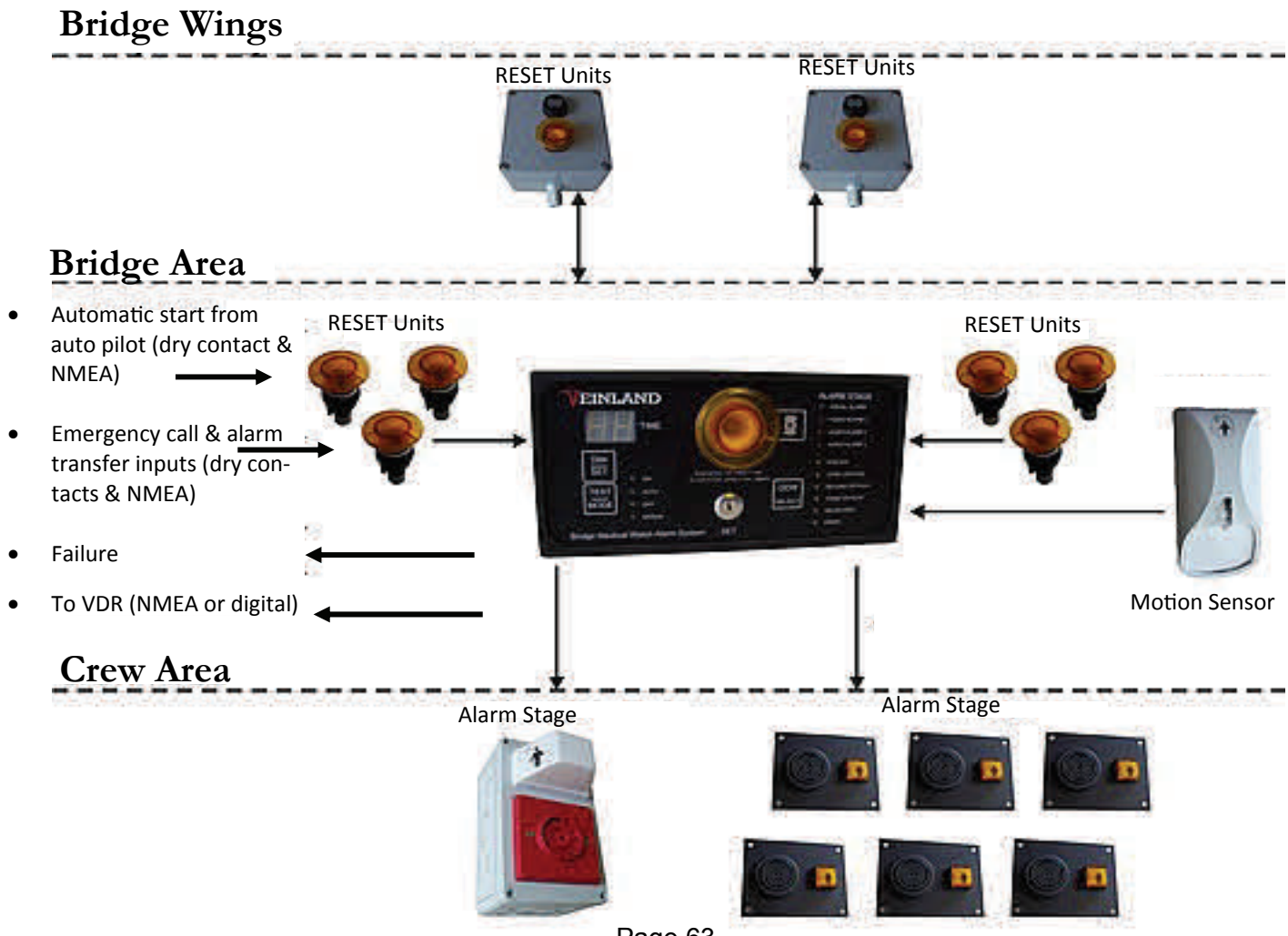
BRIDGE NAVIGATIONAL WATCH ALARM

BNWAS - Bridge Navigation Watch Alarm System

The VL-BNWAS was developed to detect the awareness of the officer of watch (OOW) to avoid accidents. In case the OOW is incapable, the system automatically generates several alarm stages.

The system meets the following standards:

- **IEC 60 945**
- **IEC 62 162-1**
- **IEC 62 616**
- **IEC 62 288**
- **IEC 61 162**
- **IMO A.694 (17)**
- **IMO A.830 (19)**
- **IMO MSC.128 (75)**



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VESSELGARD

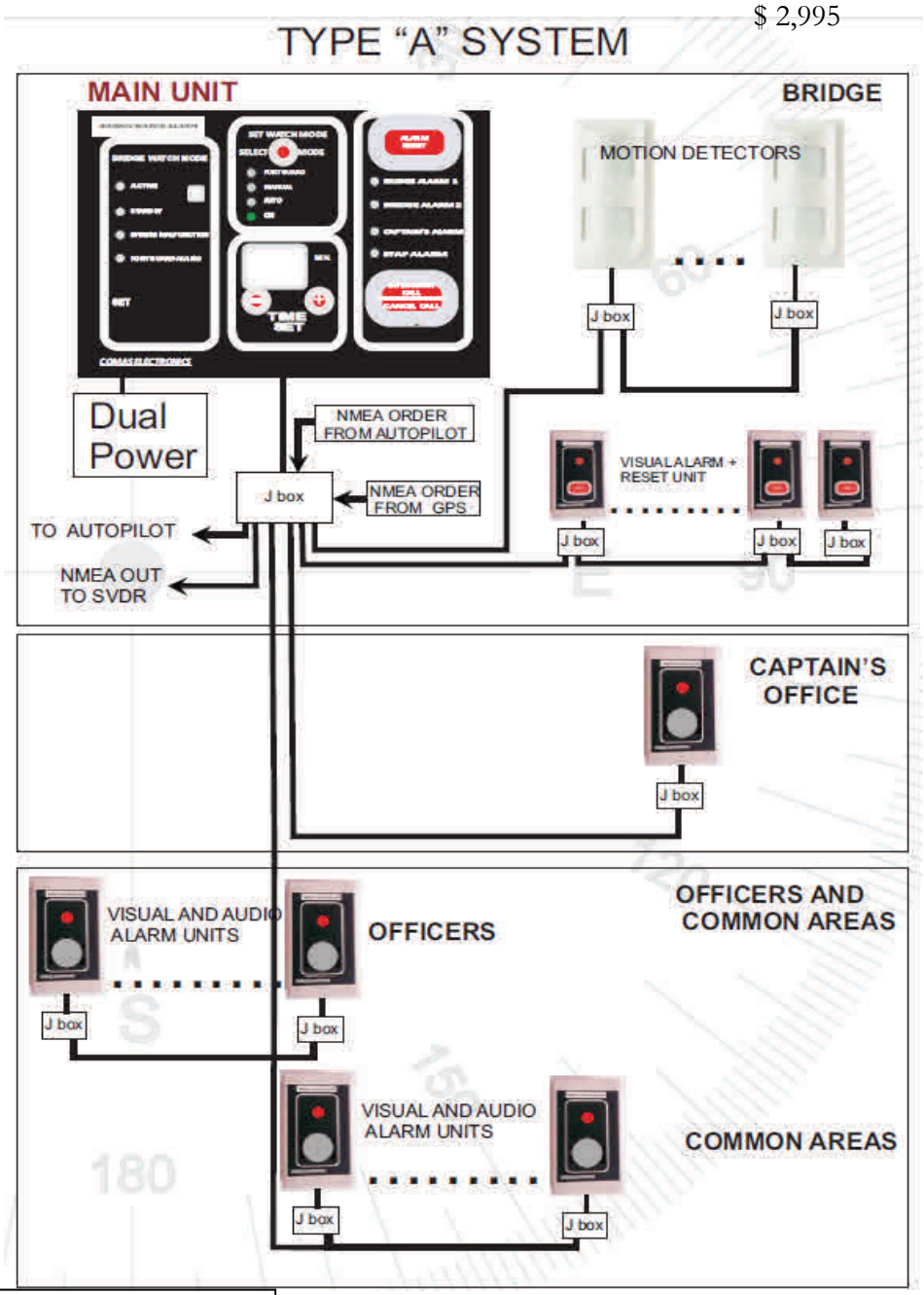
BRIDGE NAVIGATIONAL WATCH ALARM

Designed and approved to be installed and commissioned by the crew
No specialized technician is required so the total cost is kept at an absolute minimum.

List Price
$ 2,995

TYPE A PACKAGE INCLUDES:

- 1 p/c Main Unit, includes: 1 x Dual power Supply, 1 x NMEA Inter face, 1 x Emergency Alarm button, 1 x Visual Alarm unit & 1 x Reset button
- 2 pcs Waterproof Reset button (Bridge wings)
- 4 pcs Officer Cabin Alarm units (Audio & Optical alarm)
- 2 pcs Common Area Alarm units (Audio & Optical alarm)
- 1 p/c Visual Alarm unit
- 1 p/c Motion detector unit (Infrared motion detector)
- 2 Year Warranty



A single type of cable is used to connect all detectors, alarms, reset buttons and devices. Makes installation simple, fast, and cost effective.

TYPE APPROVAL Certification by:

BUREAU VERITAS.

Certificate Number: 2501/AOBV.

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LIFE JACKETS/IMMERSION SUITS

I110 Ocean Mate I

Type I flotation device that is also MED approved and complies with SOLAS requirements. Features a minimum of 35 pounds of buoyancy.

I223 The Force II

Rugged work vest for all-around industrial use. Aquafoam flotation foam retains buoyancy even if punctured. Coated with strong durable PVC.

I222 The Work Master

The fines work vest available. Includes soft, comfortable closed cell foam and body encircling belt with buckle for quick adjustment. Maximum comfort in a work vest.

I590 Cold Water Immersion Suit

Cold Water Immersion Suit with Extended Hypothermia Protection is intended for offshore use. Features face seal and flap, attached five finger gloves, waterproof zipper and PFD light pocket.

I030 Ring Buoy REF

Industrial ring buoy measures 30". Molded from tough polyurethane plastic, this heavy-duty buoy resists common chemicals, marine oils, and UV rays. Encircling rope is replaceable.

I077 The Powerboat

Flotation jacket with extra comfort, mobility and waist-length cut. Soft Suisse Aire foam with a coated nylon shell. Multiple pockets with full hook and loop closures, rib knit waistband and wrist bands.

I424 Utility Flotation Vest

Features a soft, lightweight mesh on the upper half of the vest for comfort and ventilation. Tough, nylon oxford outershell material on lower portion. Light, durable Crosstech® foam.

I580 Anti-Exposure Coverall

100% seam integrity and a full range of motion. Neoprene wrist closures, adjustment straps on ankles, thighs, and wrists. Insulated hood to keep wind and rain out and an inflatable head support.

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LIFE JACKET LIGHTS

Rescue-Dan W3
- Water activated and can be turned "off" manually if required
- LED-Technology - Flashing
- >0.75 cd for >8 hours
- 5 year shelf-life
- Compact-Ultra Low
- The light is emitted through an ultra low dome, making it less susceptible to damage during evacuation.

Rescue–Dan W2 LED
- Water activated LED Lifejacket light with clip
- >0.75 cd / >8 hours
- USCG-SOLAS-MED
- 5 years shelf-life

Rescue Dan M2
(DA2758M) is a manually operated light

Auto Hemilight 2
- Water activated LED Lifejacket light with clip
- >0.75 cd / >8 hours
- USCG-SOLAS-MED
- 5 years shelf-life

Rescue-Dan M3
- Same as W3 but manually operated

Firefly 3
- Manually operated strobe light
- High Intensity Xenon 360° strobe
- USCG-SOLAS-MED
- Uses two Lithium AA batteries *(not included)*

L7A2 Recessed Lifejacket Light
- Replacement for L7 and L7A
- Water activated and can be turned "off" manually if required
- LED-Technology - Flashing
- >0.75 cd for >8 hours
- 5 year shelf-life
- USCG-SOLAS-MED

PML Personal Marker Light
- USCG approved
- >8 hours operation
- Color: Green

L6A-EX, Intrinsically Safe Lifejacket Light
- Water activated and can be turned "off" manually if required
- LED-Technology - Flashing
- >0.75 cd for >8 hours
- 5 year shelf-life
- USCG-SOLAS-MED-ATEX-IECEx

L6A

Other Emergency 6" SnapLights available from Datrex

ER0051M Green 12 hour
ER0052M Yellow 12 hour
ER0053M White 8 hour
ER0054M Red 12 hour
ER0055M Blue 8 hour

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LIFEBUOY LIGHTS

L160 SOLAS/MED
- Self-activating LED lifebuoy light
- >2 hours / >2 cd
- Bracket included
- Completely sealed non hazmat lithium battery
- 5 years shelf-life
- Drop tested up to 76 meters

L161 SOLAS/ MED/ATEX/IECEx
- Intrinsically Safe, Self-activating LED lifebuoy light
- >2 hours / >2 cd
- Bracket Included
- Completely sealed non-hazmat lithium battery
- 5 years shelf-life
- Drop tested up to 76 meters

L162 USCG-UL1196/ SOLAS/MED
- Self-activating LED lifebuoy light
- >15 hours / >2 cd
- Bracket included
- Completely sealed non hazmat lithium battery
- 5 years shelf-life
- Drop tested up to 76 meters

L163 USCG/SOLAS/ MED/ATEX/IECEx
- Intrinsically Safe, Self-activating LED lifebuoy light
- >15 hours / >2 cd
- Bracket Included
- Completely sealed non-hazmat lithium battery
- 5 years shelf-life
- Drop tested up to 76 meters

L90 SOLAS/MED
- >2 hours / >2 cd
- Bracket Included
- Uses 5 D-cell Alkaline batteries

SM-2 Marker Light USCG/SOLAS/MED
- Self–activating Xenon Strobe Lifebuoy Light
- Operates up to 60 hours
- Uses 6-volt lantern battery, (Not Included)
- Bracket included
- Drop tested up to 30 meters

RB2 BATTERY, GENERIC TYPE
- Used widely for lifeboats

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SOLAS FIREFIGHTER SUITS

List Price

PS3789 - SOLAS Fireman's Outfit — $ 1,200

Approved according to SOLAS 96/98/EC. Complete outfit consisting of two-piece fire suit, gloves, helmet and boots.
The tunic is provided with front zipper extending to top of collar and hook/ loop intake at wristlets. The trousers are provided with fly zipper and adjustable braces. Elastic intake at waist on the back part of trousers.

Lining:
Nomex Viscose 130 g/m2 quilted with Aramid felt 150 g/m2. The trousers are provided with lining from crotch and downwards.

The SOLAS approved fire-fighter suit features the following:

- State-of-the-art fabric preventing wear and tear.
- Lightweight and easy to store.
- Comfortable to wear.
- Raglan sleeves ensuring high flexibility in extreme situations.
- Inverse pockets.
- Hook and loop fastener around sleeves enabling adjustment, increasing comfort and protecting against flames.
- Pre-bent knees protecting the fire-fighter from getting burnt when crawling.

PS379566 - SOLAS Heat Protective Suit — $ 1,200

Approved according to EN531, 96/98/EC, SOLAS.

Light two-piece firefighter suit in a silvery color with helmet, gloves and boots. The complete set comes in a bag. This one-size suit protects against radiant heat, burns and scalds from steam. The gloves are NOMEX to provide extra protection. It is recommended that the suit is worn with underwear

Design:
- The tunic is provided with snap buttons
- The trousers are provided with braces

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EMERGENCY ESCAPE BREATHING DEVICE (EEBD)

List Price

M-20.2

OCENCO Emergency Escape Breathing Device **$ 795**

The OCENCO (also known as Viking) M-20.2 EEBD is the most economical solution to complying with the new IMO resolution requiring carriage of EEBD's on SOLAS class vessels. The M-20.2 has a 15 year service life requiring only visual inspection by shipboard personnel once every two years. It can be donned in seconds and provides 15 to 32 minutes of superior performance. The storage case measures only 8¼" x 9¼" x 4¼" and weighs only 3.1 pounds. Also available is a stainless steel bulkhead bracket for storing the EEBD unit. OCENCO offers the M-20.2T training unit which comes complete with trainer, manual, video and extra mouthpieces in a light blue secondary container.

SAVER CF

DRAGER Constant Flow Emergency Escape Breathing Apparatus **$ 795**

Allows safe, effective and uncomplicated escape from hazardous environments with minimal user training. It uses a simple fail-safe pressure reducer, giving a consistent air flow rate at all cylinder pressures, while a combined diffuser and exhalation valve give an excellent air supply to the streamlined hood. The air hood neck seal is ozone resistant ensuring seal integrity whenever the unit is used. The Saver CF has a very low cost of ownership - with no mandatory service for 10 years. And refillable after use. Approved to EN 1146

Automatic activation
The unit is automatically activated on opening the carrying bag and can be simply reset in the event of false alarm.

Long life neck seal
The air hood neck seal is ozone resistant ensuring high levels of protection, even after storage.

High visibility
The unit is contained in an instantly recognizable orange carrying bag, incorporating photo luminescent panels allowing the unit to be seen at very low ambient light and visibility levels.

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MULTI- GAS DETECTORS

List Price

GX-2009

Smallest Four Gas Confined Space Monitor **$ 695**

- Simultaneous detection of 4 gases, LEL, O2, H2S & CO
- Smallest / Lightest 4 gas monitor on the market ° 2.7" H x 3" W x 1" D, 4.6 oz
- Dual audible alarm ports (95 db @ 30 cm)
- 3 visual alarm LED's
- Vibration alarm
- IP-67 Waterproof/dustproof design
- Calibration and bump test lock out or reminder controls
- Large capacity data logging standard - 8

RKI is proud to offer the smallest and lightest 4-gas monitor in the world, the GX-2009. Weighing only 4.6 ounces, it fits in the palm of your hand (2.75" H x 2.95" L x .98" D). The GX-2009 simultaneously monitors and displays combustibles, oxygen, carbon monoxide, and hydrogen sulfide. Other features include a waterproof and dustproof design with IP 67 rating, an impact resistant rubber over-mold body that is RFI resistant, and a large capacity data logging system included as standard.

GX-2003

Personal Sample Draw 5 in 1 Gas Monitor **$ 1,150**

- Compact size, weighs only 11 ounces
- Monitors Combustibles, O2, CO, and H2S
- 0 to 100% volume Methane
- Auto-ranging display of % volume and % LEL
- Internal sample drawing pump with 40 foot range
- Vibration, visual, and audible alarm types
- Automatic backlight during alarms
- Calibration reminder and lock out
- Ni-MH or alkaline power source
- Battery pack charges in or out of the instrument
- Quick charge (complete charge in 90 minutes)
- Glove friendly glow in the dark buttons

Built around our high-quality micro-sensor technology, the GX-2003 is RKI's smallest personal 5-in-1 gas monitor with a built in sample pump. Weighing only 11 ounces, it has many features which set the GX-2003 apart from the competition. For example, it can monitor the standard confined space gases (LEL combustibles, Oxygen deficiency, Carbon Monoxide, and Hydrogen Sulfide), however it can also measure 100% volume combustibles and dynamically display either % LEL, or % volume with its auto-ranging ability.

EAGLE Tanker Tester

Tanker Tester Gas Monitor **$ 2,250**

- Simultaneously monitor 100% LEL and volume of HC as well as O2 and H2S
- Monitor HC gas from inerted tanks
- Auto-ranging display between % volume and % LEL
- Powerful long-life pump with 125' range with filters
- Low flow pump shut off and alarm
- Security "Adjustment Lockout Switch"
- Up to 30 hours of continuous operation
- Alkaline or Ni-Cad capability
- Datalogging option
- Autocalibration

RKI is pleased to offer the most versatile portable gas detector specifically for maritime tankers. The EAGLE provides detection combinations never before offered in a portable gas monitor featuring gases like % LEL and volume of hydrocarbons, oxygen, as well as PPM levels of hydrogen sulfide.

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MULTI– GAS DETECTORS

BW Technologies by Honeywell develops, manufactures and markets portable gas detection instrumentation to protect personnel and facilities around the world. Reliable, technology-driven instruments provide cost-effective solutions for all your portable gas detection needs.

BW GasAlertClip Extreme 2 Year

This two-year, single-gas gas detection unit requires no calibration, Sensor replacement, Battery replacement, or battery Charging.

List Price: From $ 189 to $ 310

BW GasAlert Extreme

Single-Gas Monitor/Gas Detection unit for H2S, CO, O2, SO2, PH3, NH3, NO3, NO, HCN, CI2, CIO2, O3 or ETO

List Price: From $ 275 to $ 735

BW GasAlertQuattro

Easy to use 4-Gas Monitor for Hydrogen Sulfide (H2S), Carbon Monoxide (CO), Oxygen (O2) and Combustibles (%LEL)

List Price: From $ 605 to $ 755

BW GasAlertMicroClipXT

2, 3, or 4-gas Gas Detection unit for H2S, CO, O2 and Combustibles (%LEL)

List Price: From $ 360 to $ 595

BW GasAlertMax XT II

4-Gas Monitor with built-in sampling pump for use in confined spaces. Hydrogen Sulfide (H2S), Carbon Monoxide (CO), Oxygen (O2) and combustibles (%LEL)

List Price: From $ 659 to $ 865

BW GasAlertMicro 5

The GasAlertMicro 5 gas detection unit simultaneously monitors up to five of the following gases; H2S, CO, O2, SO2, PH3, NH3, NO2, HCN, CI2, CIO2, O3, and combustibles (%LEL)

List Price From $ 1,130 to $ 1,675

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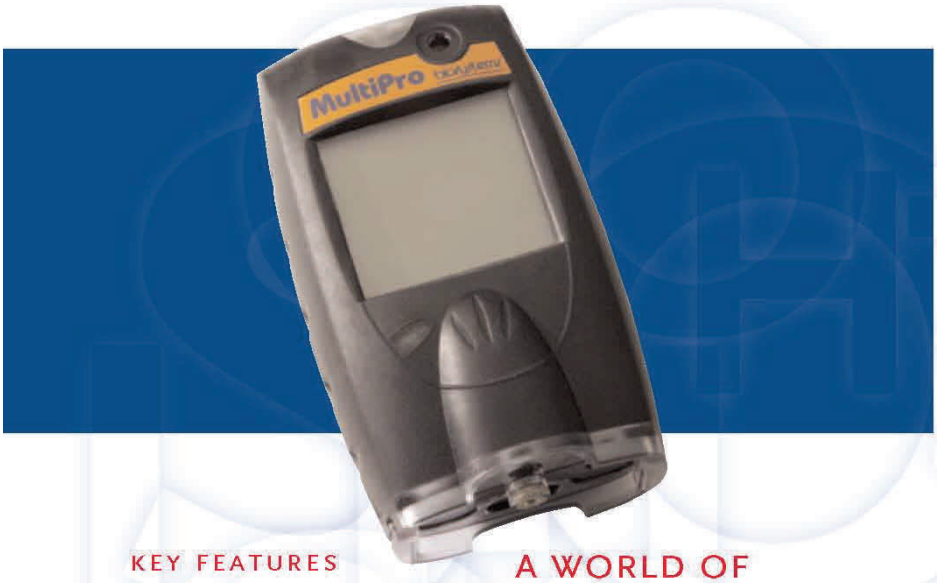
biosystems

MULTI- GAS DETECTORS

MultiPro™

Confined Space Gas Detector



KEY FEATURES

DESIGN

- Compact and rugged.
- One button operation.
- Easy to read front mounted backlit display.
- Over-molded boot.
- Meets IPX5 standard.

OPTIONAL SLIP-ON PUMP

- Software controlled pump.
- Powered by the MultiPro battery.
- Automatic low flow alarm.
- Automatic leak test before every use.

RECORDING

- Automatic event logger (20 events, including sensor type, max, average, time and duration).
- Black-Box recorder with over 40 hours of storage.
- Available with optional datalogging for convenient and easy downloading to a computer.

SMART SENSORS AND CALIBRATION

- Three sensors. O_2, LEL and up to two toxic channels using Biosystems' Duo-Tox two channel CO/H_2S sensor.
- User replaceable sensors.
- One button auto calibration.
- Calibration due reminder.
- Sensor span reserve indicators during calibration for predictive maintenance.

A WORLD OF PROTECTION IN THE PALM OF YOUR HAND

Biosystems introduces its smallest confined space detector — the MultiPro™ It's packed with features and offered at a price you won't believe. Real time readings of up to four gases simultaneously, one button operation and calibration, easy-to-read LCD display, audible and visual alarms, event logger, IrDA port, optional sample draw pump, rugged, compact and affordable — Biosystems' new MultiPro Confined Space Gas Detector does it all. And MultiPro can be configured for your needs. Three sensors and up to four channels let you monitor O_2, LEL, and either CO or H_2S, or using Biosystems' innovative Duo-Tox™ dual channel sensor, measure CO and H_2S simultaneously. Biosystems' Duo-Tox is actually two toxic gas sensors in a single sensor housing, giving you four channels of direct detection in the space of three — without cross interference.

Plus, MultiPro is built tough. Ruggedly constructed of an engineered poly-carbonate with a rubber overmold, MultiPro goes where you go, and back. Interchangeable Alkaline (3 AA) and Li-Ion battery packs, an optional sample draw pump, and a range of accessories make MultiPro the most versatile and most affordable gas detector on the market today.

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INMARSAT PHONE SYSTEMS

JUE-250

Inmarsat Fleet Mobile Terminal

List Price
$ 9,995

Unique features
The JUE-250, a pioneering next-generation satellite communication terminal, delivers the most advanced maritime service available, fully contributing to the
operational efficiency of vessel and crew.

Meet the challenges with FleetBroadband
FleetBroadband gives you faster, more cost-effective access to broadband services, offering seafarers an affordable voice and data option, while providing your vessel with a coverage area of millions of square miles. It is more powerful than any other solution on the market, allowing you to have the capability to reach peak performance and gain a competitive edge.

Simultaneous Access
This next-generation solution offers an unparalleled range of services to suit all types and tonnages of vessels. The service provides simultaneous voice and broadband data through a compact antenna, allowing you to run online operation systems, whilst still having access to email, intranet and voice calls – a significant improvement to both operational and social use.

JUE-500

Inmarsat Fleet Mobile Terminal

$ 14,995

At "work" at the same time
FleetBroadband provides simultaneous access to high quality voice and high-speed data, along with email, fax and SMS messaging. A captain can download the latest weather and navigational charts. At the same time, crew can do all the things
online that they normally do at home, such as sending emails, accessing social networking sites, calling friends and family – a vital resource for maintaining morale when away at sea for potentially months on end.

High speed
Based on 3G standards, FleetBroadband will provide constant, simultaneous access to voice and high-speed data, capable of supporting always-on broadband connectivity at speeds up to 432kbps and streaming IP data rate of up to 256kbps.
Additionally, it allows users to send and receive SMS messages of up to 160 characters, a feature that is proven popular with crew who are used of texting from their GSM mobiles while on shore.

Antenna design
The antenna base which is located inside dome is solid piece of aluminum, making it stable and durable. JRC adapted its proven three-axis control. The antenna size is greatly reduced by using the latest technologies.

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FELCOM-15

FURUNO Felcom-15 Inmarsat-C

List Price
$ 5,995

FELCOM 15 is an improvement to FURUNO's FELCOM 12 which participated in FURUNO's successful break through in the world of Inmarsat communication in particular with GMDSS. With it's improviments, unique design and compact construction the FELCOM 15 is a next generation Inmarsat at a very competitive price. It is our expectation that this new system will have a prominent place in today's communication segment where a safe connection and fulfillment of GMDSS requirements are absolute success criteria. FELCOM 15 meets all requirements for GMDSS and Wheelmark as well as Inmarsat.

A new two-piece concept
The absolute news about this system is that the display and the actual engine—the INMARSAT-C transceiver - is very compact. This ensures an easy and quick installation, which minimizes the demand for space. Since FURUNO's FELCOM 15 is directly connected to the antenna with only one antenna cable.

Apart from a transmitter/receiver function for telex– and data messages the built-in Inmarsat-C transceiver also has the possibility of receiving ECG (Enhanced Group Call), internet, e-mail and emergency calls. In addition to this the ship's GPS position can be polled by using a simple 'acknowledge' function for instance in connection with fleet tracking on land.

If you wish to use other PC's to edit/transmit messages you can connect these through a built-in Ethernet 10Base-T interface. The simple and practical menu built operation software ensures the user the facilities: it can be used as a dedicated communication unit to handle station tables and e-mails and you can even build in a GPS module. The monitor can be mounted directly on a table, or a console using the included.

A new TFT color display
FURUNO FELCOM 15 continues the new concept of color presentation on PC's and other displays. With FELCOM-15 we introduce the new light strong 10.4" TFT LCD color display, which ensures the user a clear and powerful reproduction of the chosen functions and text menus even with the strong backlighting on for instance as open bridge or in a wheelhouse.

On the front of the monitor the floppy disc drive is placed and the obligatory 'distress' activating key is hidden under a practical flap. The display is operated through a small compact separate keyboard.

FURUNO has developed a new integrated GPS module. The GMDSS requirements to GMDSS installations demands connection to GPS. However with the built-in module you avoid connection to external navigators, thus having a dedicated GPS for your GMDSS Inmarsat C.

A rugged antenna
With the included 30 meter cable the display is easily connected to the antenna. The antenna has an aluminum base and can be mounted on the special antenna bracket or on a 1" pipe using the stainless nuts which are mounted on the antenna foot.

Separate emergency units
The system is delivered with a 'distress emergency' unit IC-305 so that all emergency calls can be received/transmitted.

Low power requirements
If you connect a printer PP-150 (option) the system only consumes 17 watts in 24VDC. With this low power requirement the FELCOM 15 can be used in ships with critical voltage conditions. The consumption on emergency power will be minimal if critical rescue situations should occur.
In order to meet GMDSS requirements the system has to be connected to an AC/DC power supply, PR-240, and printer PP-510. If FELCOM 15 is going to be a part of a larger GMDSS system it has to be connected to an emergency battery and charger.

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INMARSAT STANDARD-C GMDSS

JRC JUE-85

Inmarsat-C Mobile Terminal for GMDSS - includes LRIT

List Price
$ 5,480

The JUE-85 is a small, lightweight and high reliability terminal and can be installed on small fishing, leisure boat and merchant vessels.

FEATURED FUNCTIONS:

- **Store and Forward Message Transfer**
  Data/messages can be transmitted and received by simple operation. Store and forward message transfer by ARQ ensures reliable message transmission between the MES and telex or data subscribers through a satellite channel.
- **Distress Alert**
  A ship's position which is manually or automatically entered from navigational equipment such as GPS/NNSS navigator, as well as ship's ID, date/time and other navigational information are automatically formatted.
- **Polling**
  The MES is programmed to automatically respond to a polling command from a landline subscriber and send out preedited messages and various on-board data.
- **Data Reporting**
  The MES automatically transmits ship's position data and various on-board data by presetting the file name, send-out time and address number, and input of an automatic transmission command.
- **EGC Reception**
  The MES incorporates and EGC (Enhanced Group Call) function which enables it to receive the SAFETYNET (maritime safety) and FLEETNET (commercial one-way communications) services.
- **Self-Testing Facilities**
  The MES incorporates various self-diagnostic programs to facilitate maintenance and troubleshooting.
- **DTE Printer**
  The DTE and Printer fully meet the latest IMO regulations.
- **AC/DC Switching Power Supply**
  In case of failure of the ship's mains (AC source), power supply is automatically switched over to an emergency DC source.
- **GPS Receive**
  By incorporating a JRC compact, high-performance GPS receiver in the EME (Externally Mounted Equipment), position polling and reporting is available.

Standard Equipment Includes:

Components	Part No.	Components	Part No.
EME / Antenna Unit	NAF-741GM	Printer	NKG-800
IME / Main Unit	NTF-781GM	Printer Signal Cable, 1.5m	7ZCSC0205
Keyboard	NDF-268	Printer Power Cable, 2m	7ZCSC0206
EME/IME Coaxial cable, 30m	CFQ-5922A3	Roll of Paper	5ZPAL00002
External Power Supply Unit	NBD-843A	EME installation parts	MPXP33400
Power Cable, 2m	7ZCSC0202	IME installation parts	MPXP33398
DTE /Display	NDZ-127C1	Standard spare parts	7ZXSC8501
DTE / Signal Cable, 1.5m	7ZCSC0203	Instruction Manual (English)	7PZSC0188
DTE /Power Cable, 2m	7ZCSC0204		

Available for additional price

Options	
Coaxial cable 40m	CFQ-5922A4
Coaxial cable, 50m	CFQ-5922A5
Security Button	NQE-3154
Remote Distress Button	NQE-887C
EXT BUZ (External Buzzer)	NCE-6255A
Instruction Manual (English)	7PZSC0188

Power Requirements: 19 to 32 VDC

Certifications:

QinetiQ MED Certificate	QQ-TAN-44/05-01	Valid: 9 November 2010
Russian type Approval	06.02387.011	Valid: 17 October 2011

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FURUNO

COMMERCIAL FISHFINDERS

SOUNDERS, LCD - ALL TRANSDUCERS SOLD SEPARATELY

List Price

FCV-585 Dual Frequency Digital Fish Finder. High-resolution VGA 8.4" color LCD display for vivid presentation and wide viewing angles. New digital filter technology enhances shallow and deep water detection capabilities. High Output power of 600W or 1KW. 8/16/64 color echo presentation for subtle echo images. Dual-Frequency 50/200 kHz. New DSP Filter makes the picture clearer and easier to discriminate between baitfish and larger target species. 8/16/64 Color Echo Presentations. High output power of 600W or 1kW via transducer selection. Destination waypoint feature provides range, bearing, and time-to-go to destination waypoint (up to 20 waypoints)

$ 1,695

FCV-620 Dual Frequency Digital Fish Finder. 5.6" color LCD display. Furuno's new digital signal processing technology, and digital filter helps adjust gain, STC and output power, and also suppresses noise that occurs just below the transducer. Fast pulse transmission rate produces outstanding shallow water echo presentation. High output power of 600W. Dual-Frequency 50/200 kHz. Fast transmission rate of 3,000 PRR (Pulse Repetition Rate) per second for enhanced shallow water detection.

$ 995

LS6100 Waterproof, 6 Inch, Silver Brite Monochrome LCD Display, Dual Frequency 300 Watt RMS (2400 P-P) output power. Seven depth scales, from 0-10 to 0-640 feet Displays digital and analog graphical info, including: Speed and Temperature input via optional sensor or NMEA data. Direct connection of BBWGPS antenna for GPS or WAAS. Two NMEA 0183 ports - one bidirectional and one "listen-only"

$ 495

LS4100 features a waterproof 5" high-definition silver bright LCD screen with a resolution of 240 (H) x 320 (V) pixels. Dual frequency capabilities, both 50 and 200 kHz, 300 W RMS (2,400 Watt peak-to-peak) output power. Display modes include single Low Frequency or High Frequency, Dual, Bottom-Lock Expansion, Bottom Zoom, A-scope, Marker Zoom and two Nav Data display modes. It can display water temperature, wind direction/speed, Lat/Lon, XTE and distance run in a graphical or text format. With the optional BBWGPS GPS/WAAS receiver connected, the "Mini-Navigator" feature is capable of storing up to 12 waypoints with a programmable name.

LS4100/WO (Without Transducer) **$** 295
LS4100/TM (With Transom Transduce) **$** 385
LS4100/TH (With Thru Hull Transducer) **$** 470

FCV-1150 High-brightness 12.1" LCD with AR coated glass filter and anti-polarized sunglass filter. Postprocessing Gain Control applied to all echoes displayed on the screen. White Edge bottom discrimination feature. Heaving compensation available for stable echo presentation even in rough seas when connected to appropriate sensor. Furuno Digital Filter (FDF) delivers crystal clear target presentation. Adjustable operating frequency and selectable output power. Output power is selectable among 1,2 or 3 kW.

$ 5,195

FCV-295 10.4" 'Fogging-Free' color LCD provides clear view in any weather conditions. Postprocessing gain control applies to all existing returns on the display. White Edge function trace the bottom contour with a thin white line. FURUNO Digital Filter delivers crystal clear target presentation. FURUNO Free Synthesizer transceiver allows adjustable operating frequency. You may choose any two frequencies between 28 and 200 kHz to fit your fishing operation. Output power is selectable from 1, 2 or 3 kW.

$ 3,295

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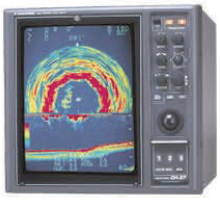
COMMERCIAL FISHFINDERS

CH37/113

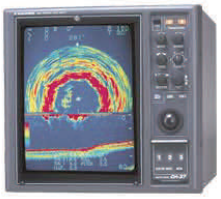
FURUNO SCAN



Furuno's CH37 is a high-performance color sonar suited for bottom trawlers, tuna seiners and other fishing vessels. Based on Furuno's exclusive multi-sector beam forming technology, it provides the combined advantages of searchlight and omni-directional sonars at a reduced cost.

CH37/60

FURUNO SCAN



The CH37 is the first Sector Sonar to incorporate a TNM (Trawl Net Management) display. By inputting net height and width dimensions, the Operator has the ability to overlay the net mouth opening on the vertical portion of the Sonar display. The net height and width data may be referenced to a compatible trawl system date or set manually.

CSH5LBB/55

FURUNO SONAR

Based on the popular Furuno CSH5MK2, the black box CSHLBB/55 is a cost-effective multi-beam color scanning sonar. It displays the underwater situation in 360 degrees around your vessel, showing echoes in 16 colors on your choice of display.

CH37/162

FURUNO SCAN

The CH-37 now gives you both Horizontal and Vertical presentations combined on the same screen. Additional features are programmable scan speeds and scan ratio between the horizontal and vertical displays. Only the CH-37 Sector Scan Sonar offers this amount of versatility.

FSV30BB

FURUNO SONAR

The FSV30BB is a groundbreaking scanning sonar using Furuno's revolutionary signal processing technology and hardware expertise. Furuno's first-rate technologies bring about outstanding omni-direction searches with long range detection all around the vessel horizontally and vertically.

FSV84BB

FURUNO SONAR

Based on the popular Furuno CSH5MK2, the black box CSHLBB/55 is a cost-effective multi-beam color scanning sonar. It displays the underwater situation in 360 degrees around your vessel, showing echoes in 16 colors on your choice of display.

When connected with appropriate sensors such as GPS, heading sensor/gyro and E/S together with an optional interface board, the CSHLBB/55 displays own ship's position, speed, course, heading, and water temperature.

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INTRINSICALLY SAFE DIGITAL CAMERA

iCAM501i

List Price

Intrinsically Safe Digital Still Camera

$ 1,695

The perfect visualization tool for use in hazardous classified locations in all sectors of industry including chemical and pharmaceutical plants, oil & gas drilling rigs and production platforms, tankers, barges, refineries, and mining installations. ATEX and IECEx certified. FM approval pending.

Made of rugged injection molded anti-static plastic the ***iCAM501*** is IP65 rated for use in the most arduous environments, yet weighs only 7 ounces (200g). The slim stick shaped design permits single-handed operation and convenient pocket carry. Certified for use with leading brand AA alkaline batteries which can even be replaced in the hazardous area.

Image stabilization and super bright LED flash illumination provide high quality images. The 3.1 megapixel resolution and 1GB NAND flash memory permit up to 5,000 jpeg images to be stored. Easy PTP download via USB port. All images are time & date stamped.

Record voice annotations in .wav format saved with the corresponding image filenames for easy retrieval and matching.

Field upgradeable firmware allows the user to load future upgrades via the USB port.

Additional Information:

- Intrinsically safe
- Simple "point & shoot" operation
- Optical viewfinder
- 3.1 Megapixels
- 1 GB flash memory, 5000 photos
- Image stabilization
- Super bright LED flash
- Voice recording
- User upgradable firmware
- Compact - fits in pocket
- Powered by AA batteries
- Replacement for iCAM500

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WTN Electronics, Ltd.

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ComNav

THERMAL IMAGING CAMERAS

V2 Dual Camera System

NMEA0183/
NMEA2000
GPS Compass Inter-
face for on screen
HDG display

V5 Dual Camera System

List Price Range: $ 39,000 to $ 44,000	List Price Range: $ 47,000 to $ 49,000
320 x 240 , Gyro Stabilized Thermal and lowlight Camera System	640 x 480 , Gyro Stabilized Thermal and lowlight Camera System

- Unbeatable 60Hz frame rate with unmatched sensitivity of <40 mK
- Joystick controlled easy touch 4x electronic zoom in 0.1 step increments
- Rugged construction complies with military standards to operate in challenging navigation environments with lightweight aluminum design with mono-crystalline germanium tempered glass weatherproof to IP67
- 360 degrees continuous pan and +/-90º tilt provides seamless view Coverage
- Low-Lux, high resolution integrated camera with 36x optical zoom coupled with 12x digital zoom, total magnification of up to 432x
- LowLight window with built-in heater for auto defrost
- TEC Cooled Thermal array
- 9Hz Model available

HV125 Monocular Thermal Camera

HV260 Binocular Thermal Camera

List Price Range: $ 4,395 to $ 7,495	List Price Range: $ 17,995 to $ 21,495
Up To 2.9Km Object detection range (with 50mm lens)	Up To 4.65Km Object detection range (with 80mm lens)
Manual Focus	Motorized Focus
LCD High resolution display	OLED high resolution display

- 384 x 288 resolution (40% more than standard 320x240 modules)
- 50Hz high performance frame rate
- Easy touch 2x electronic zoom
- Rugged construction with IP67 rating
- Black Hot / White Hot Selection
- Rechargeable batteries
- External interface to Computer (USB 2.0), Power and LCD Display
- Still picture capture and Video recording with a removable storage card
- Extremely portable and tripod mountable

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THERMAL IMAGING CAMERAS

List Price

M-Series
The M-Series gimbal re-defines maritime multi-sensor system design, drawing on FLIR's 25 years of experience in building combat-proven airborne and maritime thermal imagers for militaries, Coast Guards, and governmental agencies around the world. If you want to use a tougher, better-performing FLIR, you'll have to join the Special Forces. M-Series cameras provide four-times the thermal resolution and more than twice the range performance compared to other systems. 2X and 4X e-zoom functions give the thermal camera best-in-class range performance. Proprietary, patent-pending, image enhancement algorithms called Digital Detail Enhancement (DDE) let all of FLIR's front-line products see more in the most challenging conditions.

M-324XP Includes single payload camera with 320 x 240 pixel thermal microbolometer, Joystick Control Unit with weather cover, weather proof ethernet coupler, 25' ethernet cable, mounting hardware, and user's guide. (18 gauge power cable and RG 59 video cable not included)
$ 8,995

M-324L Includes dual payload camera with 320 x 240 pixel thermal microbolometer and low light imager, Joystick Control Unit with weather cover, weather proof ethernet coupler, 25' ethernet cable, mounting hardware, and user's guide. (18 gauge power cable and RG 59 video cable not included)
$ 14,995

M-625XP Includes single payload camera with 640 x 480 pixel thermal microbolometer, Joystick Control Unit with weather cover, weather proof ethernet coupler, 25' ethernet cable, mounting hardware, and user's guide. (18 gauge power cable and RG 59 video cable not included)
$ 13,995

M-625L Includes dual payload camera with 640 x 480 pixel thermal microbolometer and low light imager, Joystick Control Unit with weather cover, weather proof ethernet coupler, 25' Ethernet cable, mounting hardware, and user's guide. (18 gauge power cable and RG 59 video cable not included)
$ 19,995

Navigator II
The Navigator is a low-cost thermal imager designed for navigation and collision avoidance. It features the same thermal imager found in many of FLIR's military products, and is packaged in a rugged enclosure designed for forward navigation. Navigator is available in 3 configurations: as a fixed-forward system, a panning only system, or a pan-and-tilt system with 360-degree visibility. High quality, long-wave thermal imager. Automatic image optimization. Wide angle, 36 degree lens. Works with most Multi-function displays (MFDs). Graphical overlayand. Delivers excellent imagery in total darkness, through smoke and light fog. Requires no adjustments from the operator to reveal outcroppings of land, channel markers, and obstructions. Provides excellent situational awareness for navigation. Pan and Pan/Tilt models include 2X E-Zoom feature for extra range performance and added safety.

432-0001-01-00 Navigator, White, NTSC $ 4,999
Included in purchase of Navigator unit: Navigator Thermal Camera Head, 25ft Video Cable, 25ft Power Cable, Fused, Power Switch, Users Guide

432-0001-09-00 Navigator, Pan/Tilt, White, NTSC $ 8,995
Included in purchase of Navigator Pan/Tilt: Navigator Thermal Camera Head, 25ft Video Cable, 25ft Power Cable, Joystick, Control Unit (JCU), Users Guide

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Intellian

SATELLITE TV ANTENNAS

B3-611W2

i6W 2-axis Global System with 60cm Dish & WorldView LNB Gen 2 — List Price: $ 10,495

B3-913W2

i9W 2-axis Global System with 125cm Dish & WorldView LNB Gen 2 — $ 14,995

W-Series

The W-series marine satellite antenna systems' WorldView™ LNB module receivers both circular polarized signals used in the Americas and linear polarized signals that are standard throughout the rest of the world. Offering the high-quality access to satellite TV services that is synonymous with Intellian, boaters are no longer required to undertake the painstaking hassle of purchasing multiple LNB modules, reconfiguring complex systems and manually changing the LNB unit inside the antenna dome each time the vessel crosses into a different satellite service region.

The w-Series WorldView™ LNB module allows mariners to seamlessly switch between circular DirectTv, Dish, ExpressVu services in North America; Direct TV Latin in Central and South America; and linear polarized Sky Mexico in Central and South America—all by simply pressing a remote control Button

S6HD:

Intellian s6HD is a digital marine satellite TVRO (Receive Only) antenna system specially designed for DIRECTV services for all types of vessels (anchored or in transit) to automatically identify, track and capture satellite signals from the Digital Video Broadcasting (DVB: the International standard for digital TV transmissions) compatible satellites.

Intellian s6HD is a dual-band 2-axis marine satellite antenna system which is capable of receiving 3 DIRECTV satellite signals simultaneously. Receiving signals from one DIRECT 101°W Ku-band satellite and two DIRECTV 99°W simultaneously watch all DIRECTV channels no matter which satellite your target program is coming from. This also enables the channel guide data to remain constantly up to date. No delay time or changing the satellite signal, you can simultaneously watch every DIRECTV channels.

Multi-band Alignment Control System Keeps the multi-feed LNB aligned with the three DIRECTV satellites while underway even during heavy seas in the harsh marine environment or when high-speed cruising.

Plug and play, DIRECTV capable - easy, reliable operation

Expandable up to 32 receivers and beyond - supports DVR receivers

Patented Wide Range Search (WRS®) algorithm - enhances signal acquisition

Built-in GPS and GPS NMEA 0183 interface

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KVH INDUSTRIES, INC.

SATELLITE TV ANTENNAS

Model Number — List Price

TracVision HD7 – DIRECTV just like at home
Watch the channels you want, when you want, on whatever TV you want because you're watching all three satellites at once, giving you HDTV just like you enjoy at home! The TracVision HD7, 24-inch (60 cm) diameter stabilized satellite TV solution, is the world's most advanced maritime satellite TV system that is capable of tracking and receiving signals from 3 satellites simultaneously. It offers DIRECTV North America standard and high-definition programming from both Ka-band and Ku-band and true DVR support in a single dome. Provides vessels 55 ft and up with HDTV and satellite TV just like at home. The system is equipped with an IP-enabled ACU that includes Wi-Fi and Ethernet so that users will be able to manage the system from any web browser-enabled – a laptop or iPhone – and any updates to the system will be as simple as plugging in a USB memory stick.
Antenna Dish Diameter 24" (60 cm)
Radome Diameter/Height 26" D x 27" h (66 cm x 68.6 cm)
Antenna Weight 61 lbs (27.6 kg) LIST NET

01-0323-01 $ 12,995

TracVision M9
Includes an ultra-high efficiency 32" diameter antenna with proprietary RingFire technology for outstanding reception and signal gain for expanded coverage areas, perfect for boats 80 ft and larger. Offers unsurpassed High-Performance (HP™) DVB® tracking and superior offshore performance in even the most demanding condition thanks to automatic, stabilized skew control and an integrated gyro-stabilized digital compass (a KVH exclusive!). Includes versatile Master Control Unit for trouble-free set up, easy system monitoring, multi-satellite configuring, and easy switching between satellite TV services. Supports automatic satellite switching from your remote control (a KVH exclusive) and multiple TVs and receivers so everyone onboard can enjoy the TV programs they want.

TRACVISION M9 01-0282-01 $ 14,995
72-0339 Tri-Americas LNB Upgrade Kit $ 1,395

TracPhone V3
15.5" in diameter, the TracPhone® V3 is the world's smallest maritime VSAT antenna system and works with KVH's exclusive, global mini-VSAT BroadbandSM service. This system is the perfect solution for staying in touch with friends and family on shore. Enjoy surfing the web, communicating via e-mail, and calling home with a system designed for boats as small as 30 feet. Travel around the world and stay connected with crystal-clear voice service for $0.49 per minute to land lines *and* cell phones wherever you go. Get download speeds as fast as 2 Mbps for just $0.99 per MB! The TracPhone V3 features an ultra-high-efficiency antenna using KVH's exclusive RingFire™ design and groundbreaking dielectric feed rod for excellent reception in bad weather. Its rugged design offers superior tracking and stabilization, perfect for any yacht and even tuna towers! The remarkable TracPhone V3 offers the next generation in marine SATCOM, available today!

01-0335-01 $ 16,995

TracPhone FB150
The TracPhone® FB150 is the smallest in KVH's family of Inmarsat FleetBroadband-compatible TracPhone systems, measuring 13" x 13.5" and weighing less than 11 lbs. It offers broadband connections as fast as 150 Kbps, outstanding quality voice connections, SMS text messaging, and access to weather data, sea conditions, chart updates, friends, family, and the office in any weather. Airtime packages for the FB150 start as low as $59 from KVH. Global coverage provided via the brand-new Inmarsat I-4 satellite constellation, ensuring 20+ years of reliable service to vessel owners around the globe. Perfect for boats as small as 40ft.

Antenna Dish Diameter 13.5" (31.75 cm)
Radome Diameter/Height 13" D x 13.5" h (33 cm x 34 cm)
Antenna Weight 10.9 lbs (4.94 kg)

01-0320 $ 7,495

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KVH INDUSTRIES, INC.

SATELLITE TV ANTENNAS

Model Number: List Price:

TRACVISION M1

World's smallest and lightest in-motion satellite TV system, only 12.5" D. antenna and 7.5 lbs. Includes deluxe integrated 12V mobile DIRECTV receiver/controller and backlit RF/IR remote control – everything you need for satellite TV onboard in one box. KVH's exclusive RingFire technology provides the highest signal gain for coverage throughout the continental U.S. and its coastal waters. Ultra-quiet motors, no cable wrap, single- cable install, and an exclusive, user-friendly onscreen system set-up and control. Fully automatic satellite acquisition and satellite switching via remote control just like at home!

TracVision M1 01-0314-01 $ 2,995
TracVision M1 DX 01-0314-04 $ 2,995

TRACVISION M3

The TracVision M3 – brings the excitement and variety of DIRECTV® programming aboard wherever you cruise. Our advanced, super-efficient 14.5" antenna gets crystal-clear reception and provides coverage comparable to 18" marine satellite TV antennas. Access to 300+ channels of DIRECTV programming – news, weather, sports, movies, and XM radio music! Great offshore coverage (100-200 miles). Fast, powerful, ultra-quiet motors and no cable wrap. Fully automatic satellite acquisition. Supports multiple receiver/TV installations.
North American Version

TRACVISION M3/ST 01-0279-01 Full Satellite with Receiver and remote $ 3,995
TRACVISION M3/DX 01-0279-04 Includes HD Interface Box $ 3,995

TRACVISION M5

You want the best for your boat, and with the high-performance, 18" diameter, HDTV-ready TracVision M5 satellite TV system, you've got it. Quality, reliability, durability – the TracVision M5 stays locked on and connects you to the premium satellite TV entertainment you want. Add KVH's exclusive Tuna Tower Upgrade for outstanding performance in even the most extreme conditions. Plus, the TracVision M5 includes KVH's exclusive RingFire™ antenna technology, giving you 30% greater reception and more range than any other 18" (45 cm) system so you can enjoy satellite TV where no 18" (45 cm) marine satellite TV antenna system has ever worked before! Outstanding reception and signal gain when heading offshore in boats 40-60 ft. Automatic satellite switching.

TRACVISION M5 01-0286-01 $ 4,695
TRACVISION M5 01-0286-21 WITH CONTROL PANEL $ 4,995
TRACVISION M5 01-0286-11 WITH GYRO TRAC $ 6,295
72-0339 Tri-Americas LNB Upgrade Kit $ 1,395

TRACVISION M7

Includes an ultra-high efficiency 24" diameter antenna with proprietary RingFire technology for outstanding reception and signal gain when heading offshore in boats 60-80 ft. Allows you to enjoy programming from your favorite satellite TV services around the globe for unmatched choices in entertainment. Offers unsurpassed High-Performance (HP™) DVB® tracking and superior offshore performance plus the option to add the Tuna Tower Upgrade (a KVH exclusive!). Includes versatile Master Control Panel for trouble-free set up, easy system monitoring, multi-satellite configuring, and easy switching between satellite TV services. Supports automatic satellite switching from your remote control (a KVH exclusive!) and multiple TVs and receivers so everyone onboard can enjoy the TV programs they want.

TRACVISION M7 01-0287-0 $ 17,495
TRACVISION M7 01-0287-21 WITH CONTROL PANEL $ 7,995
TRACVISION M7 01-0287-11 WITH GYRO TRAC $ 9,695
72-0339 Tri-Americas LNB Upgrade Kit $ 1,395

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ACR

SEARCHLIGHTS

RCL-300A
1933

List Price

Internal elevation mechanism provides pitch control of spotlight beam; protects elevation mechanism from weather. Includes fingertip remote control PointPad. Rugged triple-primed and sealed, marine grade aluminum housing. XRCiZ feature rotates and moves light assembly every 30 days from activation to keep all bearing surfaces free of corrosion and all electrical contacts functional (can be disabled). Salt water-resistant construction with nylon and phenolic washers, aluminized stainless steel screws with insulating lubricant.

$ 6,774

RCL-100
1930.3 (12v)
1931.3 (24v)

Remote Controlled Searchlight. 200,000 candela. Internal elevation mechanism provides pitch control of spotlight beam; protects elevation mechanism from weather. Includes a fingertip remote control Point Pad™; up to three remote Point Pad™ units may be installed on system; surface/flush mount options included, salt water-resistant construction with nylon and phenolic washers, aluminized stainless steel screws with insulating lubricant. Application: Sport yachts, mega-yachts, sportfish and commercial vessels.

$1,776

RCL-50
1939.3

12v Remote Controlled Searchlight. 80,000 candela. Internal elevation mechanism provides pitch control of spotlight beam; protects elevation mechanism from weather. Salt water-resistant construction with nylon and phenolic washers, aluminized stainless steel screws with insulating lubri-

$ 1,310

RCL-75
1946

12v Remote Controlled Searchlight. 180,000 Candela. Dual lamp design provides redundancy, reliability-works when you need it. Bright, powerful halogen beam with 3° h x 5° w beam spread. Easy-to-install Point Pad™-style joystick control Robust, function-and feature-rich searchlight is easy to install 7-wire wiring harness, 17' length. Lamps easily replaced by removing top cap to access rear light assembly. Desiccated filter dries air; protects reflector and light assembly. Innovative “direct drive” system eliminates uncontrolled light movement in choppy conditions. Heavy-duty gear teeth and electric motors.

$ 380

RCL-600
1941

6,000,000 Candela Joystick. Remote Controlled Searchlight. Size: 17.0 x 14.0 x 15.0 x in (43.2 x 35.6 x 38.1 cm). Weight: 65.0 lbs (29.5 kg). Material: Aluminum. Color: White. Operation: Remote joystick control. Accessories: 1942 - Secondary remote joystick; A1-14-0093 - 150W/12 or 24V Xenon lamp. Beam Angle: Variable; can be narrowed and broadened. Elevation Angle: 18° up, 30° down. Elevation Speed: 7.5° per second. Turning Speed: 11° per second Low, 27° per second High. Lamp: 150 watt Xenon. Limited Warranty: 1 year. Carton Dimensions: 26.0 x 21.0 x 19.5 in (66.0 x 53.0 x 50.0 cm). Carton Weight: 65.0 lbs (29.5 kg).

$ 12,490

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NEWMAR

BATTERY CHARGERS & DC CONVERTERS

DC *Power Onboard*

Battery Chargers

Phase Three Series Battery Chargers 12, 24, 32 V; 8-95 Amps
Phase Three Modular Battery Chargers 12, 24 V; 67-100 Amps
ABC Series Battery Chargers 12 V; 8-25 Amps

Inverter Chargers

A Complete Line of High Power DC-AC Inverters with Built-in Battery Chargers.

DC-DC Converters

Convert 20-50 VDC to 12 or 24 VDC output for powering communication/ navigation equipment, on negative ground systems or Isolated series for positive ground applications.

Electrical Panels

Wide range of electrical panels providing control, protection and monitoring for on-board electrical circuits, ranging from basic meter panels to AC/DC master distribution centers.

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Heavy Duty Series Power-Pac With Built-In Battery Back-up Integrated Power System

Digital Instruments

Quick, accurate, up-to-the-moment monitoring of on-board AC and DC electrical systems.

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DC Power Converters

Nav-Pac StartGuard

Stabilizing Converters

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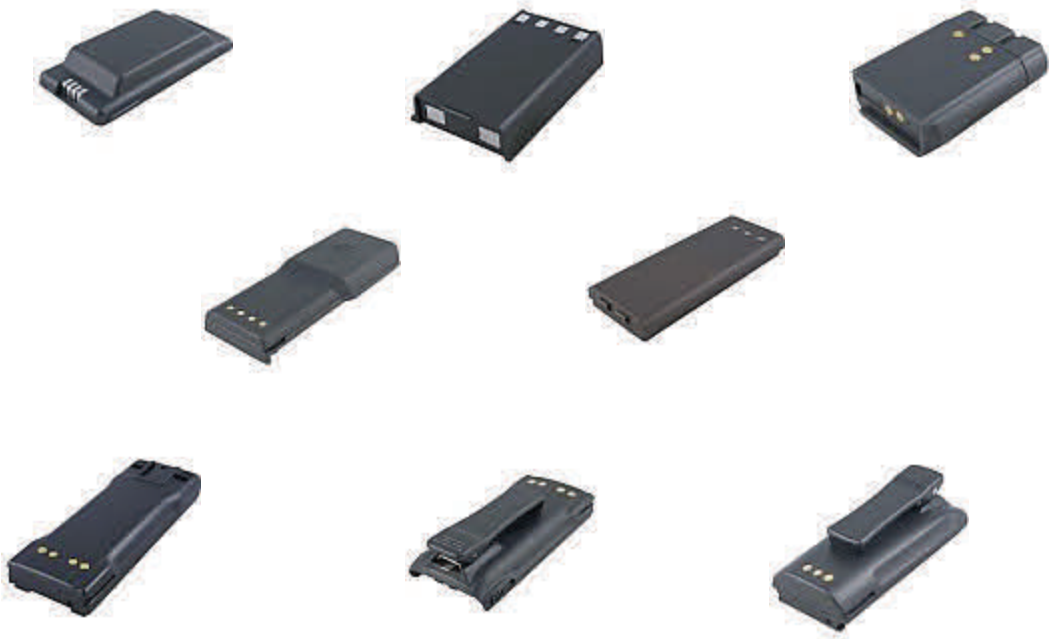

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